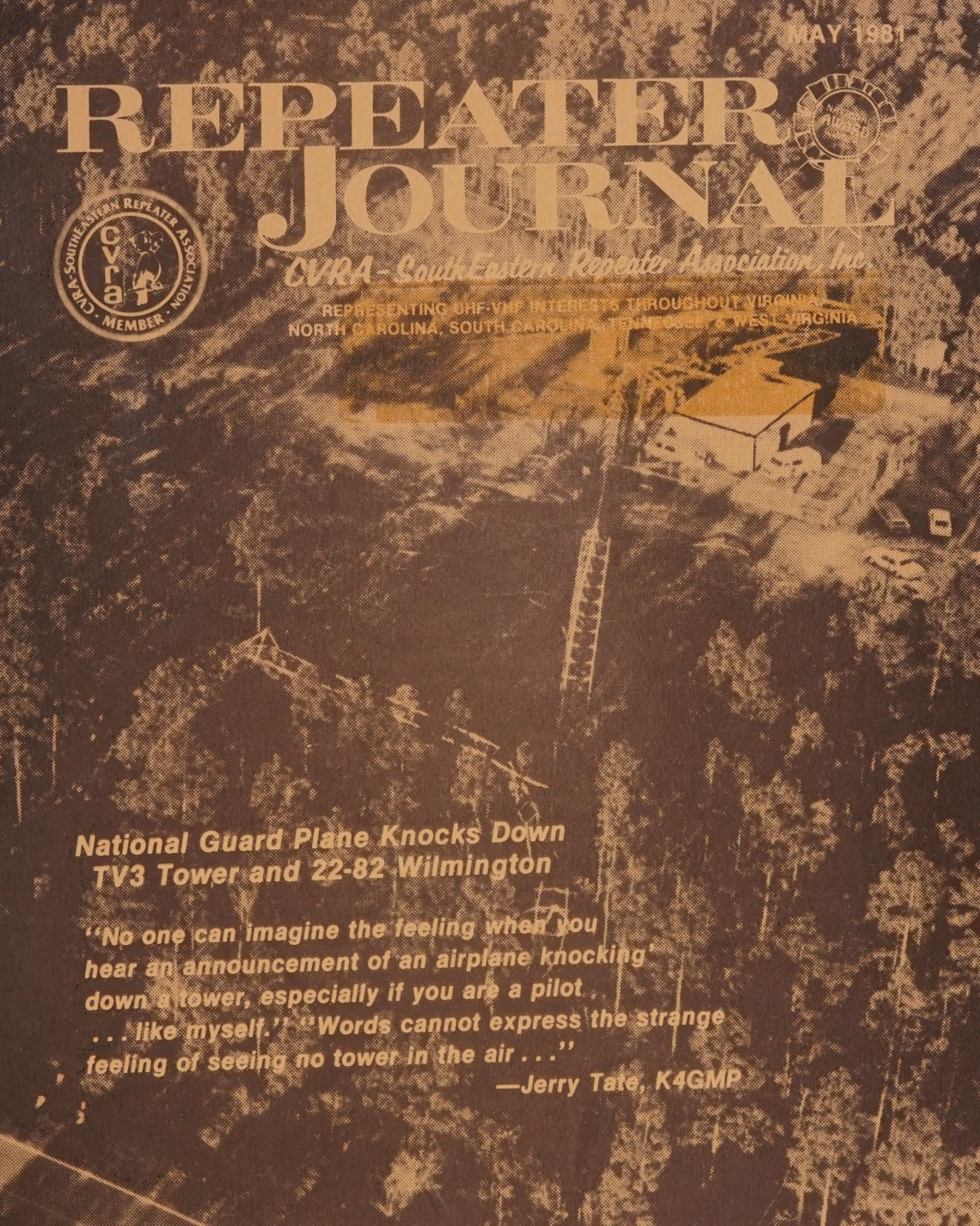
MAY 1981

REPEATER JOURNAL

CVRA - South Eastern Repeater Association, Inc.

REPRESENTING UHF-VHF INTERESTS THROUGHOUT VIRGINIA, NORTH CAROLINA, SOUTH CAROLINA, EASTERN [illegible], WEST VIRGINIA



National Guard Plane Knocks Down TV3 Tower and 22-82 Wilmington

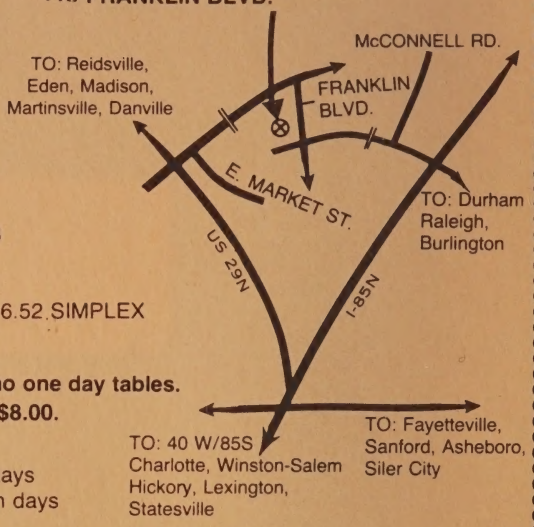
"No one can imagine the feeling when you hear an announcement of an airplane knocking down a tower, especially if you are a pilot . . . like myself." "Words cannot express the strange feeling of seeing no tower in the air . . ."

—Jerry Tate, K4GMP

GREATER GREENSBORO HAMFEST*

*NOT TO BE CONFUSED WITH THE GGO
(Greater Greensboro Open)
SATURDAY, JUNE 27 and SUNDAY, JUNE 28
9 A.M. to 5 P.M. Both DAYS

GREATER GREENSBORO HAMFEST
NATIONAL GUARD ARMOURY
110 FRANKLIN BLVD.



TALK IN: 146:19/79 Repeater & 146.52 SIMPLEX

HOURLY DOOR PRIZE DRAWINGS

SWAP TABLES: **Advance reservations, no one day tables. One table for two days-$8.00.**

ADMISSION: Advance: $3.00 for both days
At the door: $3.50 for both days

GRAND PRIZES: SWAN 100 MX/Power Supply/Mobile Antenna/Transformer/Mobile Mike ICOM IC2AT // SWAN Watt Meters // MFJ Antenna Tuner // M & M Audio Filter // MFJ Zulu Clocks // and many others.

COMPUTERS: Many Amateur applications of computers to Ham Radio will be shown and experts will be available to answer questions and solve problems.

ARES: The Guilford County Chapter of ARES will be in attendance during the fest demonstrating how to hold a Field Day. The local members will help you with any problem you have with Field Day or ARES (Does your County have a Chapter?) and invite your participation in their Field Day.

POSSUM TROT NET: Hear Ye! Hear Ye! All Possum Trotters, O'Ps, and interested parties are invited to come, see old friends, and meet new ones when The JUDGE calls the first GGH to order!

TO: GGH
Bruce Ward-KA4NZF
2716 Dumont Drive
Greensboro, N.C. 27403
(919) 299-2845

ADVANCE TICKETS: $3.00 ($3.50 at the door)

NAME _____ **CALL** _____

STREET _____ **CITY** _____ **STATE** _____ **ZIP** _____

Please reserve _____ tables for the GGH at $8.00 per table for both days. Total Tickets needed _____ Total Remittance $_____.
Please make checks payable to the Greensboro Hamfest.

REPEATER JOURNAL

CVRA-SouthEastern Repeater Association, Inc.

MAY-JULY 1981 "IN OUR 10th YEAR" VOLUME 10, NO. 2

ORGANIZED 1971

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ON THE COVER

An aerial view of the twisted tower of WWAY-TV, home of the 22-82 Wilmington Repeater. Photo ctsy: Philip Morgan, WWAY-TV photographer.

CVRA REPEATER JOURNAL EDITORIAL COMMENT

I CAN'T BELIEVE I HEARD THAT . . .

Hearing grown men and women say "I'm at the QTH so I'm gonna QSY before I QRT" is bad enough to hear on two meters. But now my ears are being subjected to a new form of torture as I frantically (being an old timer on two-meters) try to understand what some people are saying as they describe standard two-meter channels.

It's not uncommon to hear someone say, "lets go to six one six, six seventy-six." Say that fast one time and see if you immediately figure out that they are really saying 16-76 (pronounced one-six, seven-six.)

In our part of the country we have two highways that tend to confuse conversations. If a person says he's on 220, we're not sure if he is on highway U.S. 220 through Greensboro, or he's operating on 220 mhz FM. Likewise, we hear someone say that he's on fifty-two, I wonder if he's going North or South through Winston-Salem. Actually the lad meant five-two simplex.

So you see, our jargon is all messed up on two meters. No two groups talk the same language. Some examples include: for the repeater pair of 16-76 (one-six, seven-six) we hear one seventy-six, down 600, or like I mentioned earlier. How about seventy-six? These various expressions tend to be confusing, or at least make you think a few moments before you decide what he's talking about. It's about like me using phonetics and letters at the same time in my call. Try this fast: K-Kilo, four, M-Mike, O-Oscar, B-Bravo. Why not use K4MOB, or if you think phonetics are needed to clarify try simply Kilo Four Mike Oscar Bravo.

Back to repeater frequency jargon. I personally think if every person would take just a few moments and learn the 2-meter band plan, use the right jargon when he speaks of frequencies, things would work much smoother.

The ARRL, CVRA bandplan was carefully worked out years ago to provide maximum usable channels in the limited two-meter space we have.

The band starts at 146.01 transmit for the first channel. Since we use the standard 600 khz. spacing between inputs and outputs of repeaters, then the first channel receive frequency would be 146.61.

We further learned that the channels on 2-meters are 30 khz. apart, so we know that the second channel transmit and receive would be 146.04-146.64. To shorten things, we drop the megahertz and simply say 01-61 and 04-64. (Pronounced oh-one, six-one and oh-four, six-four.)

Before anyone gets to thinking too much about this, we know the repeaters receive and transmit are exactly backwards from how we identify them. When we speak of 01-61, we always are mentioning that OUR transceiver is transmitting on 01 and is receiving on 61.

Continued On Page 16

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REPEATER JOURNAL

MAY - JULY 1981

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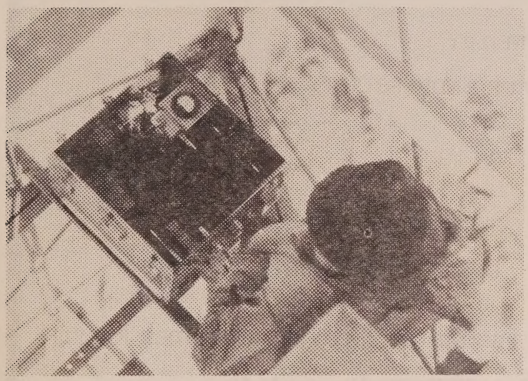
SPECIAL NOTICE: Membership deadlines to receive current REPEATER JOURNAL are now two weeks PRIOR to regularly scheduled months of publication, February, May, August and November. Applications received after deadlines will not receive a Journal until the next scheduled issue is published. Memberships received at hamfests will receive a current Journal as long as supplies last.

DEADLINE FOR AUG.-OCT. JOURNAL IS JULY 1

The CVRA REPEATER JOURNAL is published quarterly, during the months of February, May, August and November of each year and mailed free to members of CVRA—Southeastern Repeater Association, Inc. Permission is granted for quoting from the CVRA REPEATER JOURNAL providing credit is given. The CVRA will swap newsletters with other Repeater Councils and News Organizations on request. The CVRA REPEATER JOURNAL press run is 4,000 copies with circulation in excess of 3,300 copies and is entered as Third Class Mail at the Post Office in Greensboro, N.C. Full and Associate Membership mailing address is: CVRA, P.O. Box 5655, Greensboro, N.C. 27403. All news and Newsletter exchanges should be mailed to the Editor and Publisher of the CVRA REPEATER JOURNAL, Wayne C. Williams, K4MOB, 600 Lakedale Road, Colfax, N.C. 27235.

2,000 FOOT REPEATER FOR EASTERN NORTH CAROLINA

—by David Taylor, KO4S



DAVID TAYLOR, KO4S braces himself high on the WITN-TV 2,000 foot tower to make adjustments to the 085-685 Grifton repeater.

—Photo by Mac Garris, WD4CTC

For many years, 16-76 served the inland, Eastern portion of North Carolina with a BIG signal. Now it has been replaced by another giant.

The new Grifton, N.C. repeater, W4NBR/R went on the air on 085-685 in October of 1980 at its home on the new 2,000 foot WITN-TV/WNCT-TV tower.

The repeater transmitting equipment and antenna is located at the 1475-foot level, with the receiving antenna and equipment at the 1675-foot level. TV-7 and 9 antennas are on top of the tower with WITN-FM stereo antenna just under them. The WNCT-FM stereo antenna will probably be on the tower sometimes this summer, located just above the 2-meter repeater repeater receiving antenna.

The repeater system is still under construction. Much work has already been done, with much more to come as weather and access to the tower will allow.

Antennas used at present are manufactured by GAM. Phelps-Dodge Stationmaster antennas will be installed as soon as possible and will hopefully increase the coverage area. A GE Mast'r receiver is being used with a 2-pole monolithic crystal filter on the front end.

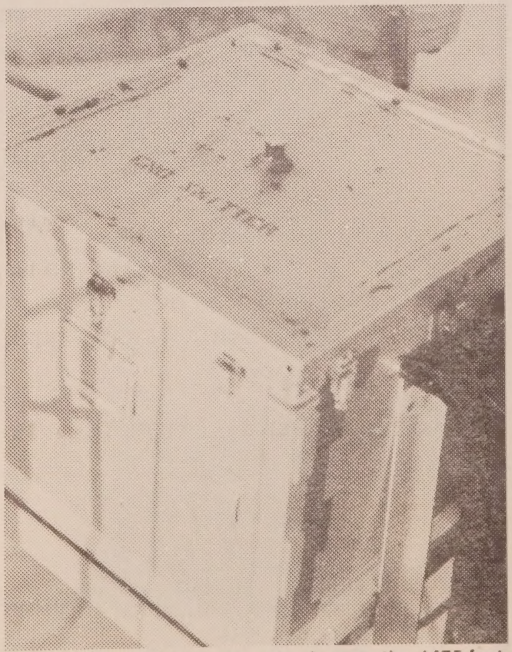
Present transmitting equipment is a Heath HW-202 transceiver being used as an exciter, with its output going through a Phelps-Dodge BP-BR cavity resonator. A new PLL exciter will probably go into service in the Summer or early Fall.

The 16-76 Grifton machine, WR4ABP was taken out of service in November due to the change in ownership of the old WITN-TV tower, but will return to the air soon as a local coverage machine in the Kinston area.

Experiments also will be made with 16-76 on the 2,000 foot tower to determine which frequency will be better suited for use on the tall tower.

Many people in ENC Repeater, Inc. have contributed much time, energy and expertise in the construction of W4NBR/R under poor working conditions.

Interference from the RF fields of the two TV stations and an FM station with another one to follow soon, is the main problem at this time. When these bugs are worked out, we will have another super repeater in Eastern North Carolina.



ENC REPEATER in its protective box on the 1475-foot level of the 2,000 foot WITN-TV tower. The 085-685 machine replaces the 16-76 in Grifton.

DURHAMFEST MAY 16 & 17

The Durham FM Association presents their 1981 DurhamFest May 16 & 17 at the South Square Mall, Durham, N.C. The event to be held under a covered but well lighted parking deck will feature 2 days of exhibits and flea market. An extensive ladies program is planned, with the shopping mall open Saturday for shopping, relaxation or just walking around. Talkin is on 825-225, 22-82 and 3923 khz.

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ADDITIONAL PRIZE TICKETS $2.00 EACH OR 5 for $5.00

FLEA MARKET TABLES - $5.00

COMMERCIAL BOOTHS - $35.00 - INCLUDES 2 ADMISSION TICKETS

and

2 Prize Tickets

7:30-11:00 PM - HOSPITALITY ROOM (Omar Temple)

TALK IN 146.34/94

146.16/76 AND 146.19/79 FOR GENERAL USE

SUNDAY - GRAND PRIZE - KENWOOD TSI 130S

SECOND PRIZE - AZDEN PCS 3000 2 METER RIG

SATURDAY PRIZE - ICOM IC - 2A SYNTHESIZED 2 METER HANDIE TALKIE

For more information contact:
CHARLESTON HAMFEST COMMITTEE
P. O. Box 30643
Charleston, SC 29407
(803) 747-2324/ 496-3660

C'MON FELLAS GIVE ER A CHANCE

CVRA-SERA Full Membership has really been quite a pill this year. First we had a large number of applications and checks lost in the mail, or wherever. Then we moved the post office box to Greensboro. Many didn't get the word, most did.

The biggest problem confronting us in Full Membership is applicants not taking time to fill out the application, or at least supply enough information so we can find out who they are.

A few choice instances include: A personal check from someone, with a note attached, "Sorry we're so late, please renew our repeater." —Now this might not seem too complicated for you, but place this check in with 100 other applications spread over 5 states, and 775 different repeater possibilities and you see the problem. Also the repeater has changed calls since last renewal, they have moved the location and failed to notify the CVRA and the search begins.

We can only hope we get everyone's memberships correctly listed. Most of the applications we receive are correctly filled out.

Many applications, two names for representatives to get the Journal are filled out, but no call signs. We have to assign them a special computer callsign, then we find out later they are getting two Journals—their Associate Membership was not transferred to full membership, because they have TWO CALLSIGNS.

Another frequent problem, someone will fill out a portion of the application then put "same as last year," although they forgot, last year didn't list their new 220 mhz repeater, the call sign change to both systems and we leave one of the two repeaters as a NON MEMBER.

A favorite is putting a new location down for the repeater, or giving the new call sign on the application without telling us what the old one was. Cross-referencing and finally finding these are always fun. We've had several instances of the repeater getting listed twice, one as a member and the other as a non member.

In brief, please take time to complete your application. It might seem like a lot of bother to you, but it sure helps the CVRA-SERA keep up with who you are and where you are.

GASTONIA (NC) HAMFEST MAY 23

The Gaston County ARS will have their annual Hamfest on May 23 at Karyae Park on Linwood Road about six miles SW of Gastonia, N.C.

The event will begin at 9 a.m. with main drawings at 2:30 p.m. Main prizes include a Kenwood 520SE and ICOM-2-AT. Food will be available on the premises. Special features will include Fleamarket, Exhibitors and Bingo for the ladies. For additional information, Write Glenn Varner, W4PBQ, 1332 Poston Circle, Gastonia, N.C. 28052. (704) 866-8339.

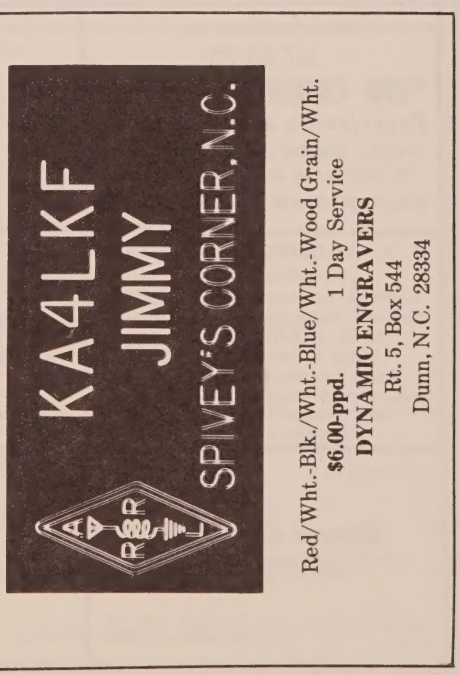
DIRECTOR SETS SCHEDULE FOR BOOTHS AT TENNESSEE HAMFESTS

The Tennessee State Director and his assistants are planning to have CVRA-SERA information booths at the following Tennessee Hamfests this year: TRICITIES, KNOXVILLE, CHATTANOOGA, OAK RIDGE, CROSSVILLE, NASHVILLE, HUMBOLT and MEMPHIS. The dates of these hamfests are on the Hamfest calendar in this Journal.

The booths are provided to introduce your area Directors, to provide info the CVRA-Southeastern Repeater Association, to solicit memberships, and to give assistance in any area of repeater problems.

In addition to the booths, the Directors are holding special meetings of repeater owners at Memphis and Nashville. The purpose of the meetings is largely to introduce these groups to our organization and to promote a more cooperative spirit and better channel of communications between repeater owners and frequency coordinators.

We invite all VHF lovers and especially repeater owners to stop by and meet Cliff Hensley, WB4NKL and myself at any of these hamfests. (Sam Kirby, WB4HAP, Tn. Dir.)



GREENSBORO (NC) HAMFEST JUNE

The first annual Greater Greensboro, North Carolina Hamfest will be held on June 27 and 28, Field Day weekend. The event will be held at the National Guard Armory on Franklin Blvd. in Greensboro with plenty of parking, inside exhibits and flea market. Tentative plans are to set up a complete Field Day station at the Hamfest to enable persons attending to operate a little Field Day after they do their "swapping". Refreshments and food available on the premises. Hourly door prize drawings will be conducted with large prizes to include a Swan 100 MX, 2-Meter Synthesized handheld and many others. Large prize drawings will be held Sunday afternoon. Other features of the hamfest will include computer displays, ARES demonstrations, Possum Trot Net activities and more. Reservations or other information may be obtained by writing: Bruce Ward, KA4NZF, 2716 Dumont Drive, Greensboro, N.C. 27403.

ROANOKE (VA) MAYFEST ON 24th

The Roanoke Valley ARC will present their Roanoke, Virginia Mayfest on May 24th at the Roanoke Civic Center Exhibition Hall. The event moving from overcrowded quarters, will feature much inside floor space for dealer exhibits and flea market. Food and refreshments are available in the Civic Center. Many prizes will be offered during the weekend as well as other special entertainment activities. For further information write the Roanoke Valley ARC, P.O. Box 2002, Roanoke, Virginia 24009.

CARY MID-SUMMER FEST JULY 18

The Cary ARC announces that their ninth annual Mid-Summer Swapfest will be held July 18, Saturday at the Lion's Club Shelter in Cary, N.C. The facility is near the Cary High School. Festivities will get underway at 9 a.m. and continue with flea market, displays, and a 1 p.m. auction sale. Prize drawings will commence at 2:15 p.m. Talkin is on 28-88, 75-15 and 52 simplex. Further information may be obtained by writing the Cary ARC, P.O. Box 53, Cary, N.C. 27511.

COLUMBIA (SC) HAMFEST MAY 30

The Columbia ARC will sponsor its 4th annual Hamfest on May 30 at the Midlands Tec College, Beltline Campus in Columbia, South Carolina. Doors will open at 9 a.m. Food and drink is available as well as DX seminars a super flea market and other activities. Many prizes will be given away by 3 p.m. Talkin is on 34-94. For further information write: CARC, P.O. Box 5802, Columbia, S.C. 29250 or see their ad this issue of the JOURNAL.

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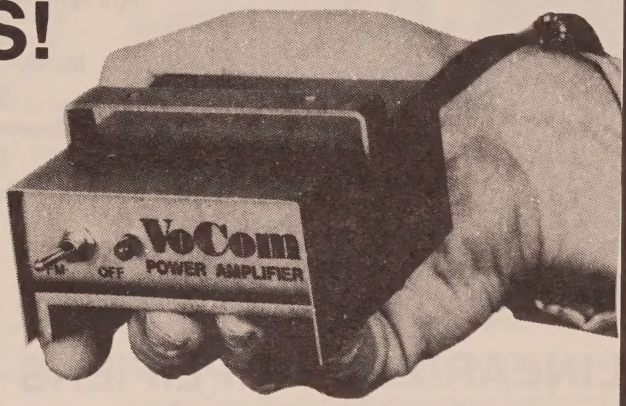

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6M10-120P	50 MHz	10	120
2M4-40P	144 MHz	4	40
2M10-80P	144 MHz	10	80
2M30-160P	144 MHz	30	160
2M10-150P	144 MHz	10	150
1.3M10-70P	220 MHz	10	70
1.3M30-140P	220 MHz	30	140

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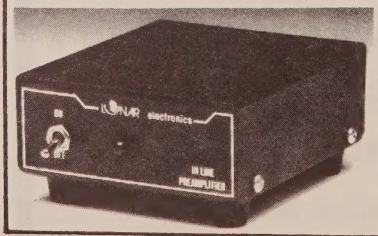

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AMATEURS IN CIVIL AIR PATROL

—Lt Col Jim Carr, CAP
WB4TLO Hickory, N.C.

"RED DOG 227, this is BLUE DOG 7." I let up on the mike button just in time to hear the end of the familiar Morse identifier of WR4ACM dit-dotting it's way through the speaker of my Regency HR-2B.

"Uh-oh," I thought; "wrong repeater." Aloud: "Scuse me, y'all; WA4 PXV, this is WB4TLO."

Such a mistake is not unusual among the 50 or so radio amateurs in North Carolina who are also members of Civil Air Patrol. CAP, the official auxiliary of the U.S. Air Force, has attracted a lot of people with technical knowhow, especially those who enjoy working with young people.

Many Ham operators, especially those associated with the various MARS programs, are familiar with CAP's 4 mHz frequencies, of which there are ten, but did you know that CAP also works frequencies in the 7, 11, 14, and 20 mHz bands? Those HF frequencies, all single-sideband, of course, we'll save for another time, since this is a VHF journal.

The repeaters used by CAP operate for the most part on the 143.90 mHz input, with a 148.15 mHz output. There are some, including one in downtown Raleigh and one under construction near Boone, that operate with an input of 143.750 and the 8.15 output. Still others operate on a 3.75/149.925 split in Virginia and the District of Columbia. (Va. has 2 on this pair)

Since seven of us here in the Hickory, North Carolina area are members of the Unifour Amateur Radio Club, someone monitoring our 25/85 machine on Barrett's Mountain is about as likely to hear Civil Air Patrol traffic as anything else. Since CAP is a non-profit organization, it's traffic is permitted on the Amateur Bands, and since there are only eight CAP repeaters in North Carolina, we don't hesitate to use Amateur repeaters when we are away from our own machines.

Civil Air Patrol shares several sites with Amateur repeaters, including Spencer Mountain, near Gastonia, Cowee Bald, near Cullowhee, Spivey Mountain, near Asheville, and Rich Mountain, near Boone. The Rich Mountain machine is presently under construction, thanks to the generosity of the Watauga County Amateurs, who are allowing CAP to use their site. CAP has eight repeaters in North Carolina. Of the other Wings in the Middle East Region, South Carolina has six repeaters, Virginia eight, West Virginia, three, Maryland, two, Delaware, three, and the District of Columbia, called the National Capital Wing, has one repeater which is located in Northern Virginia.

Other areas around North Carolina where we find several Hams in CAP included Asheville, where the Commander of the North Carolina Wing,

CAP-HAMS Dan Renfro, WA4PXV and Jim Carr, WB4TLO Plan a flight in the Hickory-based CAP Cessna 172. Tower in background supports Hickory Squadron antennas.

—photo ctsy, Jim Carr, WB4TLO

Colonel Foy Reese, can be heard occasionally on the 16/76 or 31/91 machines as WB4KSA. Lt. Col B.B. 'Dink' McCormick of Stony Point uses WB4RFH. He is Director of Communications for Middle East Region.

Civil Air Patrol is a multi-faceted organization that is somewhat unique in that it includes male and female members from the age of 13 up. Many CAP members count their own families as members alongside them. Even youngsters under 13 can be associate members and fly in CAP aircraft under certain circumstances. Civil Air Patrol is in all 50 states, the District of Columbia and Puerto Rico, and, while it's communications system is recognized as the world's largest privately-owned shortwave network, it is especially proud that, during it's infancy in the early days of World War II, a German submarine Captain, asked what his biggest problem was in operating off the coast of the United States, said, "Those damn little yellow airplanes."

WINCHESTER VA. HAMFEST IN BERRYVILLE AUG. 2

The Shenandoah Valley ARC will present their annual Winchester Hamfest on August 2. The event as usual will be held at the Fairgrounds at Berryville, Va. about 10 miles east of Winchester off I-81. Commerial exhibits are in air conditioned buildings with large wooded area for flea markets and tailgaters. Prizes, food and special activities. Further information may be obtained by writing SVARC Hamfest Chairman, Mt. Falls Route, Box 119 AZ, Winchester, Va. 22601.

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THE ROCK HILL HAMFEST

OCTOBER 4, 1981

MINI EXPEDITION THIS MONTH IN WESTERN NORTH CAROLINA

—by Dan Henderson, WA4QQN

The Western Carolina ARS of Asheville, North Carolina is operating a "mini-expedition" from the world famous Biltmore House and Gardens this month. The estate located near Asheville is America's only European castle, built during the 1890's by George Vanderbilt. The 250 room mansion and adjacent gardens offer the opportunity to "spend a day in Europe without leaving the U.S."

W4MOE, club station for WCARS will be on the air from 12 noon May 16 through 5 p.m. May 17. Operating frequencies will be approximately 3.905, 7.230, 14.285, 21.360 and 28.540 mhz. on phone and 36 khz up from the bottom of the CW portion of the bands. Novices can look for W4MOE 10 khz. up from the bottom of the novice bands. Phone and CW modes will be alternated approximately every two hours.

Certificates will be awarded by the Biltmore Company and WCARS to those successfully contacting the "mini-expedition". Send QSL card and SASE to: W4MOE, Box 1488, Asheville, N.C. 28802. For more information send SASE and questions to same address.

ARRL TO RAISE DUES JULY 1

The Board of Directors at their meeting in March voted to raise ARRL membership fees to $25.00 a year, effective July. Although the League has managed to operate in the black over the past two years, rising costs and estimated projections in the future were reasons for the increase.

Until July 1, annual members can extend their memberships at the present $18.00 per year rate. After July 1, the rate will be $25.00. Members over 65, however will get a new break under the new levy, with a 20% discount on dues.

ATLANTA HAMFESTIVAL JUNE 20-21

The Atlanta Hamfestival will be held at the Marriott Motor Hotel Exhibition Hall on June 20 and 21 in Atlanta, Georgia. The two day event drew over 7,400 people last year and promises to be even bigger this year report the sponsors. The air-conditioned 24,000 foot exhibition hall promises to be crammed full of amateur equipment, displays, computer hardware and other interested features. Food, seminars, refreshments, rest areas all will be available, with top prizes. Altanta is one of the two major events in the mid eastern part of the country. For information, write to: Atlanta Hamfestival, P.O. Box 27553, Atlanta, Ga. 30327.

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- KENWOOD - TR2200,7200
- MIDLAND - 13-500,13-505,13-520
- REGENCY - HRT2,HR2,2A,2B,212,312 (No Sub Band)
- STANDARD - 145,146,826, C118 (No Sub Band)
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REPEATER A LA DELKER

—by Sam Kirby, WB4HAP, Tn. Dir.

OK! Here is a repeater system that will give you North Carolina and Virginia boys something to work for. I'm talking about the 90-30, WB4ZSA repeater in Nashville, Tennessee.

Tom Delker, the builder and owner of this "Music City" repeater is 23 years old and works as a broadcast consultant when he is not on duty at Delker Electronics, his Radio Shack store in Smyrma.

The 90-30 repeater gives handheld coverage of Greater Nashville and certain outlying suburbs. Nashville is a difficult area to cover due to the many ridges, and "tall" repeater sites are hard to come by. What makes the 90-30 so special? How about 5 satelitte receivers and two transmitters, and complete autopatch facilities, and all controlled by a 6800 microprocessor.

The main repeater is at the WVTV Channel 17 site in West Nashville. This repeater is duplexed with antenna at the 600-foot level of the TV tower, but the audio and keying lines are not tied directly to the transmitter. The receiver at this site and the other satellite receivers are UHF radio linked to Tom's apartment which contains a 450 to 420 repeater, autopatch, and the microprocessor. Signals coming to the apartment are then routed via UHF bands to the main transmitter on the WVTV tower. The second transmitter is a back-up unit and is located on one of the downtown buildings in Nashville.

The satellite receivers are located in Goodlettsville, Gallatin, West Nashville, South Nashville and downtown Nashville. The receiver at the WVTV tower has priority, but when signals there are too weak, a scanner at the apartment picks up another receiver where the signal is stronger. This scanner is very fast and checks all the receivers about 5 times per second. By using the microprocessor, a repeater user can control the system with a touchtone pad. The autopatch offers autodial with Emergency and other key phone numbers stored in memory. Other features are WWV, Weather and various taped messages of interest.

Backup power is provided to the transmitters and at most receiver sites. This system really works well and is considered the most sophisticated system in Nashville.

In addition to the 90-30, Tom maintains a 220 mhz and 450 mhz repeater. He is also very interested in Emergency Communications and holds the EC position for his area.

Tom invites everyone to the Nashville Hamfest year on July 26th, and to try his repeater, 90-30 for talkin.

KNOXVILLE HAMFEST MAY 23-24

The Radio Amateur Club of Knoxville presents the Greater Knoxville, Tennessee Hamfest on May 23 and 24 at the Bearden High school on Kingston Pike, off I-40/75 at Walker Springs or West Hills. The activities include Flea market and exhibitors, forums, Code Contests and others. The building opens at 7 a.m. Sat. for setups with the hamfest running 9-5 Saturday and 10-4 Sunday. Further information may be obtained by writing the Radio Amateur Club of Knoxville, Inc. P.O. Box 124, Knoxville, Tn. 37901. Hamfest talkin is on 13-73 and 90-30.

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SEPTEMBER 5-6

IN ONE INSTANT A PLANE TOOK OUT EVERYTHING

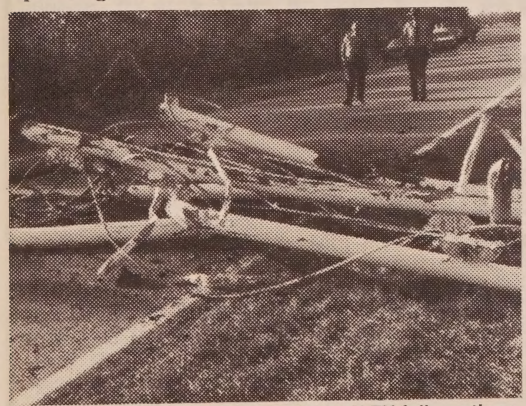
—by Jerry L. Tate, K4GMP

Editor's Note: Most of us around heard last fall of an airplane ramming a TV tower and knocking it down. At the time, we didn't realize what an effect it would make on VHF Amateur Radio on the East coast of North Carolina. We are fortunate that Jerry Tate, K4GMP took time to submit to the Repeater Journal a first hand report and pictures of the demise of the Wilmington 22-82 repeater.)

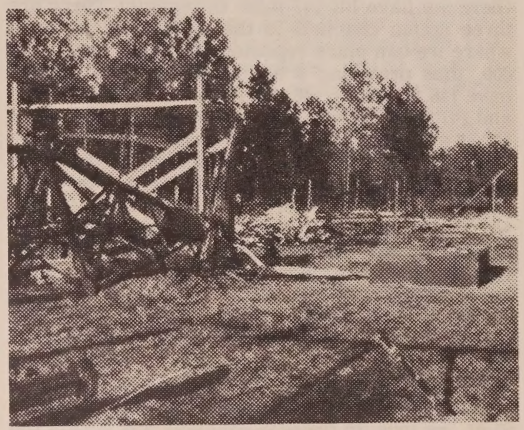
A Quiet Saturday Afternoon???

While sitting at my desk working on a piece of stereo gear, watching a basketball game on Channel 6, and monitoring 22-82, and 13-73, conversation on 22-82 was in progress with W4VNK, Bill and W4MVP, Jack. All of a sudden Jack's transmission stopped 1:05 p.m. At the time this happened there was an arcing sound, not normal to a normal repeater talk-down — it caught my attention, so I reached over and tried to key up the repeater — to no avail. I went direct and noted that no one was talking. I waited for a few minutes trying to decide just what had happened. I then switched over to the control frequency and attempted to dial the repeater back up — this also to no avail. A quick switch to Channel 3 TV station revealed that they were off the air also.

Through the years the station has had several power failures, however the generator normally starts, putting the TV station back on the air within a couple of minutes. By this time it was 1:20 P.M. indicating that the generator was apparently not operating. Realizing that something serious apparently had happened I began getting my tool box etc. together to make a trip to the repeater site to check our equipment to see if we had a problem. At 1:45 I was ready to leave when my daughter announced that she had just heard on a local radio station that an aircraft had hit the WWAY-TV tower. No one can imagine the feeling when you hear this kind of announcement. Especially if you are a pilot — like myself.



TOWER ACROSS ROAD. When WWAY-TV fell, portions fell across highway, blocking traffic until it could be moved. Road department workers had to repair pavement and fill holes made by the falling tower impact. (Photo by Richard Kye)



IMPACT OF PLANE hitting the WWAY-TV tower knocked the tower base some 15-feet off its concrete foundation. The tower doubled over and fell back on itself, portions buried in the ground as much as 2 feet. The 22-82 repeater preamp was found 18-inches under ground after the impact. (Photo by Jerry Tate)

After calling several club members, three of us, WA4KBP, Duncan WB4NWA, Art, and myself, drove to the WWAY-TV tower site. As we approached the tower site, words cannot express the strange feeling of seeing no tower in the sky. Even more strange was arriving at the actual site — as the pictures reveal — a total DISASTER. Large sections of the tower were strewn over many acres. The power transformer and power pole was lying on the ground, burning. This started a fire that burned an area of 3-5 acres.

The TV transmitting antenna and a section of the tower fell within 5 feet of the 22-82 transmitter repeater shack!! Absolutely nothing hit the repeater shack. The fence that surrounded the TV transmitting building and our repeater shack was crushed in several areas when the tower fell. Some parts of the fence was flattened by the force of guy wires as they came down. A large hole was torn in

Continued On Page 17

CAN'T BELIEVE I HEARD THAT

Continued From Page 1

So we continue up the band through 37-97, 40-00 (here we have hit 147 mhz. in receive) There are three option channels in this portion of the band where we can place repeaters down 600 khz, or up 600, thus providing 3 additional channels. So we have 146.40, 146.43, 146.46 as inputs for 147.00, 147.03 and 147.06, BUT we also can have 147.60, 147.63 and 147.66 as inputs for the same receive frequencies.

Up to this option point we have noticed that all the 146 pairs have the transmit down 600. Now as we pick up the next channel after the optional channels, we reverse and go Up 600 khz. for the transmit frequency. So our next channel is 147.69-147.09 and continuing each 30 khz like 72-12, 75-15 to the last channel of 99-39.

As the bands filled with repeaters we decided to insert 15 khz channels between each standard channel. They are called "split-splits", "tetery channels", "splinters" or just "splits."

So 15 khz up from the bottom of the band which is 01-61, we pick up the first split which is 025-625 (oh two five, six two five) The splits continue each 30 khz. spacing exactly half between each standard pair up the band to 147, the option occurs again, then we reverse in the 147 mhz portion just like we did the standard pairs. The last split channel is 975-375.

Finally the FCC opened two additional mhz. for us to play with. Twenty new channels were formed and they were called the "sub-band." The sub-band like the 146 standards and splits is "low-in and high-out." (transmit down 600 khz from receive)

The first sub-band channel is 144.51-145.11 or 51-11 (five-one, one-one) and goes every TWENTY khz. for each channel: 53-13, 55-15 etc. The last of the 20 channels is 89-49.

So we find that we have three distinctive sections of the two-meter band, (1) Standard Pairs, (2) Split-splits, and (3) Sub-Band. Each has distinctive numbers easily recognizable to enable you to know which portion of the band a person might be talking about.

One way I found to easily identify which portion of the band someone was talking about--remember transmit frequency is always mentioned first, receive second. If transmit number is smaller than receive, they mean 146 mhz. If transmit is a larger number than receive, they always mean 147 mhz. In the case of sub band, transmit is larger than receive, and is always in the 50's through 80's. This makes it quite easy.

You only have to acquaint yourself with the basic 2-meter band plan and you'll find yourself getting into the jargon that makes more sense.

So if you ever hear me say that I am on fifty-two, you know I am either going North or South through Winston-Salem and don't mean five-two simplex.

—Wayne C. Williams, Editor

THE GASTONIA HAMFEST

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PLANE TOOK OUT EVERYTHING

Continued From Page 15

A NEAR MISS . . . WWAY-TV tower fell and TV antenna just missed the 22-82 Wilmington repeater building by less than 12-feet. Jerry Tate, K4GMP, Duncan McFadyen, WA4KBP and Art Buehler, WB4NWA look over the hopeless situation.

the roof of the TV transmitting building, when a section of the tower cut through the roof, through the dieplexer and eventually through one of the transmitters. This was the worst of the damages of the TV transmitting building and equipment. The entire situation was unbelieveable. Ironically the good ole dependable Catipillar D-12 generator was doing its thing — putting out power into circuits that had been tripped.

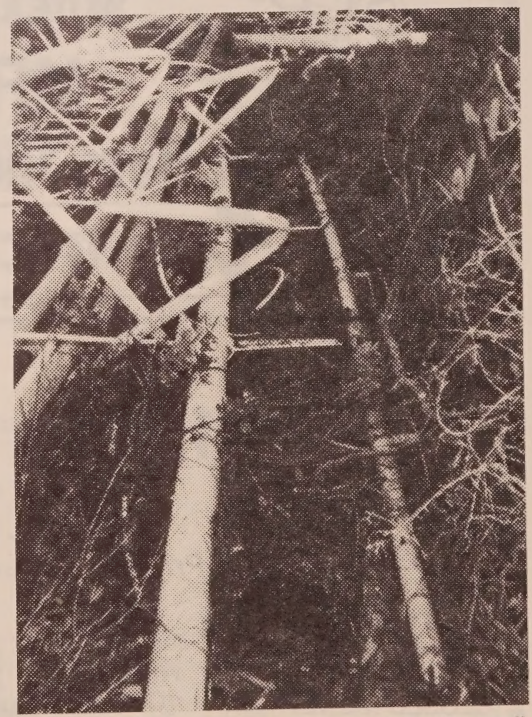
The club lost several thousand dollars in antennas, feedlines and pre-amp. The station lost millions. We are all awaiting settlement from the USAF.

WWAY-TV went in operation in 1964. They had operated without interruption, except for a few hours and also a period of a week when fire destroyed their transmitter and other equipment in 1969.

The Wilmington V.H.F. Association was formed in Jan., 1971. A repeater was constructed by March of the same year and operated temporary at the QTH of Herman Brock, K4JQJ, while under test. The repeater was moved out to WWAY-TV's transmitter site in August. This repeater had been well known up and down the coast as "the DX repeater." On occasions skip into Florida was so good that the Gainsville 22-82 repeater was shut down so that the entire state of Florida could operate through 22-82 in Wilmington. One of the longest contacts and possibly the longest contact on the east coast was made through this repeater August 1977, when a station in Nova Scotia made contact with mobile stations in Miami. Also numerous stations in Myrtle Beach made contact this same afternoon with the Nova Scotia stations. Tropospheric ducting was a common occurence each summer — everyone enjoyed this — we will miss this phenomenon.

The station engineering personnel, Art Madeley, X-amateur (W4HOT) and Elliot Hunter (WB4UNG) have been most helpful with the Wilmington VHF Assoc. and WR4AHL repeater. Many hours of assistance by these two fine engineers have helped the 2 meter hams in our area. With their help, our club members and many others, we will be back on the air with a **bigger and better repeater system.** WWAY-TV is now operating at a temporary site with a 350' tower. They are in the process of acquiring property and FAA approval for a 2000' tower. We have been assured of a position on the tower for a new solid state repeater located on the tower. No dates are known at this time, possibly within a year. A temporary site for 22-82 is being sought for at this time. At present we have 13-73 and also use of 66-06 repeaters.

To all of the Hams who enjoyed using 22-82, WR4AHL — we look forward to serving you on a **bigger and better repeater in the future. Please bear** with us.



CRUMPLED TOWER strewn across a field. The small straight section to the right of photo was once the 22-82 repeater transmitting antenna. (Photo by Jerry Tate)

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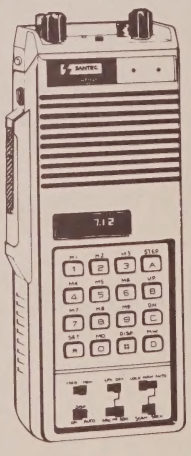

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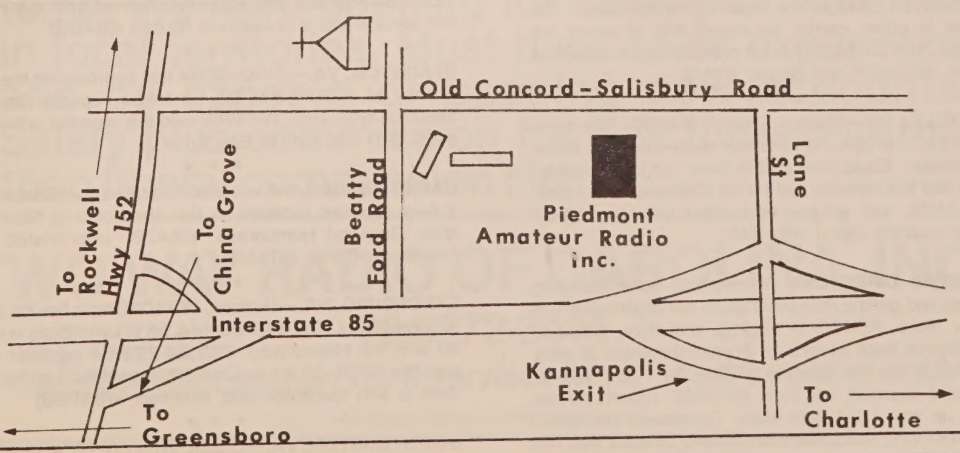

CVRA DISTRICT RAMBLINGS

Complied by Journal Staff

KNOXVILLE, TN.—The East Knoxville Radio Club reenters the repeater world with a local Knoxville autopatch machine. CVRA-SERA coordinated the subband frequency of 61-21. The exact location for the VHF Engineering machine has not yet been named. The K4KFD/R repeater will be using WACOM Duplexers and DB-224 antenna. The group formally used the 01-61 pair until it became too congested. Welcome back fellas! (Sam, WB4HAP)

• • •

FARMVILLE, VA.—The Farmville 31-91 repeater isnow operating with a new call and a new autopatch and a new control system. The machines new call is WB4NWP/R. (Mike KC4AO)

• • •

MOUNT AIRY, N.C.—The Mt. Airy 144.73-145.33 machine, long a local repeater for the Surry County area only, has been moved. In March the machine was relocated from the home of trustee WD4MDP to Fisher Park along the Blue Ridge Parkway. The site, at 3950-feet is the highest point in the parkway in the section along the Virginia/North Carolina State line. The mountain, accessable only in good weather by six miles of 4-wheel drive pathway off the Blue Ridge Parkway, is unobstructed in all directions. When some bugs are corrected the repeater should be accessable from southern West Virginia to near Lynchburg on the North, Raleigh to the East, Hickory to the West and Rock Hill to the South. Good mobile coverage along I-77 from Charlotte, N.C. north well into Virginia is anticipated. The machine at present is made from VHF Engineering boards, with a solid state amplifier, delivering about 25 watts out of the duplexer. The antenna, which is still giving problems is a Phelps-Dodge four-bay dipole. Travellers along I-77 can spot the peak by its prominent fire tower and microwave dish about 10 miles to the west of the Interstate. The machine is open, carrier accessed and all users are welcome. The CVRA-SERA full member representatives are Ron, WD4MDP and Wayne W4HG.

• • •

KNOXVILLE, TN.—George Shaver, K4HXD, has coordinated 223.16-224.76 for a new wide-coverage Knoxville repeater. Equipment details have not been worked out yet but the repeater will be on Chilhowee Mt., elev. 2843 AMSL and will be co-located with the 34-94 2-meter machine (Sam, WB4HAP)

• • •

CVRA-SERA DIRECTORS are working hard attending hamfests and getting memberships to our organization. In January, Mike, KC4AO in Virginia, and Mike, K8LG of West Virginia each picked up 20 memberships at early hamfests. At the first hamfest in Elkin, N.C. 22 memberships were obtained, and Sam, WB4HAP, reports he has picked up about 20 from early Tennessee hamfests. Larry, WB4VJE, Associate Membership Director said he, and several volunteers including Phil Wicker, W4ACY, manned a booth both days at Charlotte, N.C. hamfest and received in excess of 85 memberships. Incidentally, the Mechlenburg ARS included a CVRA-SERA Associate Membership application in their Hamfest mailing which totaled about 30,000 pieces. We have no reports on response from them as of yet. Several other large clubs who mail large hamfest mailings are talking of possibility of giving us a free ride also this year with membership applications. (Editor)

• • •

KNOXVILLE, TN.—The K4HXD 675-075 autopatch machine is sporting a new Motorola micor solid-state receiver and an additional 30-feet of antenna height. The repeater antenna a G-7 Hustler, clears the trees now. Other improvements include 7/8-inch hardline. (Sam WB4HAP)

• • •

KNOXVILLE, TN.—Coordinators are looking for a two-meter frequency pair for a proposed temporary repeater for the World's Fair (ENERGY EXPO '82). The local-only repeater will accompany a complete HF Station sponsored by the Tennessee Council of Amateur Radio Clubs. More on this project later. (Sam, WB4HAP).

• • •

BAMBERG COUNTY, S.C.—Bud, WB4WSC has coordinated the sub band frequency of 73-33 for a new 2-meter repeater in the Bamberg County area of South Carolina. No further information is available at this time. (Wayne, K4MOB)

• • •

GREENEVILLE, TN.—KB4UG and WB4NKM are working up a UHF repeater for Greystone Mt., just south of Greeneville. The KB4UG repeater will operate on the coordinated frequencies of 449.2-444.2. The Motorola tube-type repeater was recently returned from commercial service and is operational (Bobby KB4UG)

• • •

STAUNTON, VA.—CVRA-SERA has coordinated the frequency of 449.95-444.95 for a new repeater for the Staunton area. Roy, W4WRW said the repeater will be at the 4,300 foot level of Ellis Knob.

• • •

HARRISONBURG, VA.—25-85 has been coordinated for a new repeater repeater in the Harrisonburg-Staunton area. Durwood Humphreys, WA4ZBP coordinated the frequency. (Mike, KC4AO)

• • •

LYNCHBURG, VA.—Hermon, WB4DBB now has his linking completed. The 449.35-444.35 in Lynchburg is linked with the Hillsborough 222.34-223.94 repeater and also the 52-01-53.01 on Cole Mt. repeaters. Linking access is with touchtone pad. (Herman, WB4DBB)

• • •

SOUTH BOSTON, VA.—Chuck, WB4YWH is working on two repeaters for the South Boston Area. Frequencies

CVRA DISTRICT RAMBLINGS

assigned by CVRA-SERA are 52.07-53.07 and 447.25-442.25. No on-air date has been announced for either machine. (Mike, KC4AO)

WILMINGTON, N.C.—The Wilmington 22-82 repeater is on the air again from the home of Jerry Tate on a very limited basis until a better site can be found for the machine. The machine went off the air when an airplane knocked down the TV tower they were housed on. (See separate story this issue.) (Editor)

• • •

CLARKSVILLE, VA.—A new 2-meter repeater is in the works for Clarksville on 145-745. Earl, WD4BHL requested the coordinated frequency in January. No further details are available at this time. (Mike, KC4AO)

• • •

COLUMBIA, S.C.—The Columbia ARC has installed a new Antenna Specialists 4-bay dipole array with new 1/2-inch heliax on the Club's 170-foot tower home of the 96-36 repeater. The machine is a GE Master II.

• • •

LATE FIGURES: Larry, WB4VJE reports some 60 responses in by mid April on the CVRA-SERA Associate Membership application mailed out by the Charlotte Hamfest in their brochure. Larry said the final count picked up at the Charlotte Hamfest was 79 Associates and 4 Full Memberships. Not bad for one Hamfest.

RICHMOND, VA. - During the month of March the three major Richmond Amateur Radio Clubs, Richmond Amateur Radio Club, Richmond Amateur Telecommunications Society, and the Virginia Amateur Radio Association, included with their club mailings a copy of the CVRA Complimentary Repeater Listing and membership applications. This mailing totaled more than 400 pieces. (Jim, K40JE)

• • •

RICHMOND, VA. - A new broadcast type cartridge tape deck is being installed on the Richmond, 34-94 repeater. This will enable a choice of three tapes of various types of information to be called up by the proper access codes. The repeater has featured information tapes for some time now. (Jim, K40JE)

• • •

GRIFTON, N.C. - The ENC Repeater Group held their annual meeting during the latter part of March. New officers were elected: David Jones, WD4LVN was elected President, with Marvin Garris, WD4CTC, VP; JoAnn Taylor, WD4JYR, Sec.; Vernon Sorrell, KC4IV, Treas.; Andy Griffith, W4ULD, Past Pres. and William S. Page, WB4LWX, repeater trustee. New board members include: David Taylor, KO4S, Larry Schwarz, WA4RHY, David Ross, KA4SBF, Wilbert Musselman, WD4HTE, Calvin Mercer, WD4RGK and H.F. "Pete" Williamson, WA4MHA. Also Maury Cox, K4JFN was named Membership chairman and WA4HMA Emergency net coordinator. (Larry, WA4RHY)

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Sales Agent for General Electric Manufacturer's Representative selling communications systems. We have opening for sales professionals in local territories. Must have sales experience and be capable of opening new accounts. Salary plus commission for first three months, then liberal commission plan.

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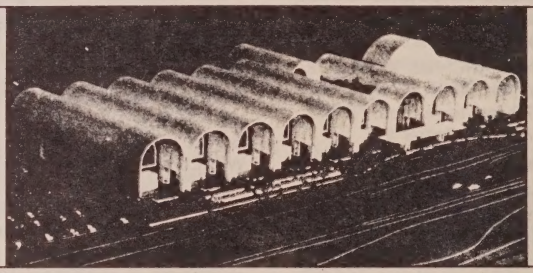

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- TALK IN STATION W4NV — Monitoring 13/73, 19/79, 37/97, 52/52 Simplex.
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PLEASE RESERVE:

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MAKE CHECK PAYABLE TO TIDEWATER RADIO CONVENTIONS, INC.
PLEASE MAKE YOUR RESERVATION EARLY! ENCLOSE SASE

A TWO METER CAMPBELL SOUP CAN ANTENNA

—by Carlton Moseley, W4YVY

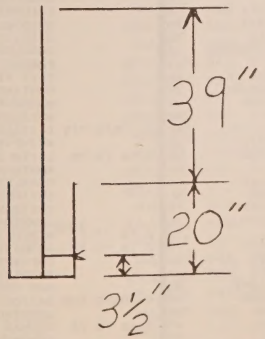
The Campbell Soup can antenna is a variation of the familiar "J" antenna. Four advantages of the soup can antenna are: (1) it's unique construction using many parts from around the house, (2) it can come apart for portable operation and storage, (3) the matching section is unbalanced to match coaxial feedlines, and (4) the matching section has immunity to detuning by near-by objects. Like the "J" antenna, the soup can antenna gives 3 db gain over a quarter wave-length whip because it uses a one-half wave-length radiator.

BACKGROUND

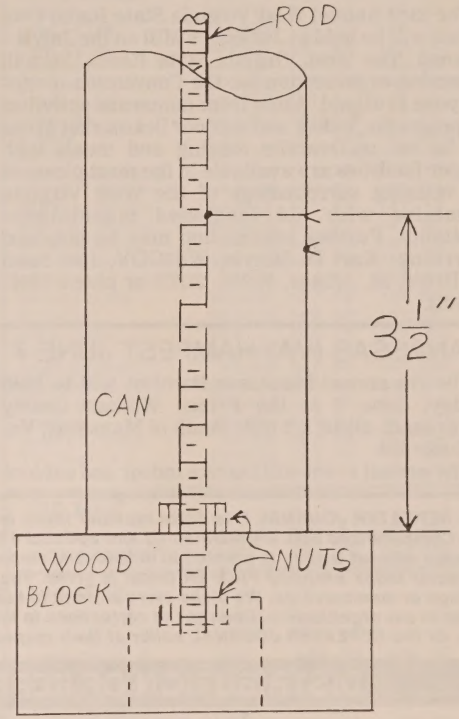
In a "J" antenna the bottom ¼-wave length is a parallel transmission line used for matching. This matching section is shorted together at the bottom to give a zero impedance. Then, due to the transformation of a ¼-wave length transmission line, the top of this ¼-wave matching section has a very high impedance. This very high impedance matches the impedance of an end-fed ¼-wave length antenna. By tapping up on the ¼-wave length matching section, a point can be found for the proper impedance match for the feed line being used.

The Campbell Soup can antenna, like the "J" antenna, uses a ¼-wave length matching section but in the Campbell Soup can antenna, the matching section is a coaxial line. The bottom of the soup can coaxial matching section is shorted together to give a zero impedance. Then ¼-wave length above the zero impedance is, once again, the very high impedance needed to match an end fed ½-wave length antenna.

Because of the coaxial design, this matching section can be fed with coaxial line without upsetting a balanced condition. Also, being coaxial, if metal objects are near the matching section they will not upset the matching section operation.



2-METER SOUP CAN ANTENNA DIMENSIONS



MATERIALS REQUIRED

5 - Campbell Soup cans (or any other can 4-inches tall and about 2½ inches or less in diameter).

1 - 5/16-inch threaded rod 24 inches long (available at most hardware stores.)

6 - nuts for the 5/16-inch threaded rod.

6 - washers (use with the 6 nuts if desired.)

1 - adjustable replacement automobile antenna that will fit over the 5/16-inch threaded rod. (The rod or antenna size may be varied to get a combination that will fit together.)

1 - 2x4 wood block 5-inches long (this block size may be varied to suit the builders needs just as long as the block is large enough to support the soup cans)

1 - coax chassis connector (BNC type or SO-239)

1 - plastic spray can top approximately 2-7/16-inches in diameter that will just fit inside an empty soup can (see text)

Continued On Page 41

JACKSON'S MILL CONVENTION HAMFEST ON JULY 4 & 5

The 23rd Annual West Virginia State Radio Convention will be held at Jackson's Mill on the July 4-5 weekend. The West Virginia State Radio Council, sponsoring organization for the Convention invites everyone to attend. Aside from numerous activities and programs, indoor and outdoor fleamarket areas will be set up.Overnite lodging and meals with camper facilities are available in the most pleasant and relaxing surroundings of the West Virginia mountains with old fashioned mountaineer hospitality. Further information may be obtained by writing: Karl D. Morris, WB8GDY, 1009 Sand Hill Drive, St. Albans, W.Va. 25177, or phone (304) 727-8453.

MANASSAS (VA) HAMFEST JUNE 7

The 7th annual Manassas Hamfest will be held Sunday, June 7 at the Prince William County Fairgrounds about 1/2 mile South of Manassas, Va. on Route 234.

The annual event will feature indoor and outdoor exhibit areas, rain or shine with plenty of parking.

The hamfest held by the Ole Virginia Hams ARC continues to grow each year as a second full sized exhibit building opens this year aside from the large 25 acre flea market outside. Prizes will included a Tentec Omni-D, Synthesized 2M handheld and many others. There will be prize drawings every hour starting at 11:00 a.m. with top prize drawing at 3 p.m. Full breakfast and lunch will be available on the fairgrounds. Talkin is on 37-97.

CHARLESTON HAMFEST JULY 18-19

The Charleston ARS presents their annual Charleston Hamfest on July 18 & 19 at the Omar Shrine Temple. The completely air conditioned building will feature commercial exhibits and flea market. The famous Hospitality Room at the Omar Temple will be held Saturday night from 7:30 to 11:00 p.m. Many prizes! Talkin is on 34-94. Two general use repeaters are also available on 16-76 and 19-79. For more information write: Charleston Hamfest Committee, P.O. Box 30643, Charleston, S.C. 29407. Call (803) 747-2324 or 496-3660.

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DISTRIBUTION OF REPEATERS BY FREQUENCY

The By City Index Appears On Following Pages

TWO METERS

4.51 /5.11	HIGH POINT	NC
	NORTHWEST SECT.	SC
	KNOXVILLE	TN
4.53 /5.13	HODGES	SC
	GALAX	VA
4.55 /5.15	CHERRYVILLE	NC
4.57 /5.17	BUTNER	NC
	MORGANTON	NC
	MURFREESBORO	TN
4.59 /5.19	WHEELING	WV
4.61 /5.21	GASTON	SC
	KNOXVILLE	TN
	BUFFALO MT	VA
4.63 /5.23	CHARLOTTE	NC
4.65 /5.25	GREENSBORO	NC
	MT PISGAH	NC
	FISHERVILLE	TN
4.67 /5.27	MANASSAS	VA
4.69 /5.29	TRINITY	NC
4.70 /5.30	BRYSON CITY	NC
4.71 /5.31	ROCK HILL	SC
4.73 /5.33	FISHER PEAK	NC
	PARSONS	WV
4.75 /5.35	CHARLOTTE	NC
	BLAND	VA
	FALLS CHURCH	VA
	FRONT ROYAL	VA
4.77 /5.37	N. WILKESBORO	NC
	BECKLEY	WV
4.79 /5.39	SAURATOWN MT	NC
	SIMPSONVILLE	NC
	CHATTANOOGA	TN
4.81 /5.41	LEXINGTON	NC
	WILLIAMSTON	NC
4.83 /5.43	NEWTON	NC
	NASHVILLE	TN
	GALAX	VA
	MORGANTOWN	WV
4.85 /5.45	ANDERSON MTN	NC
	LINCOLNTON	NC
	NEWPORT	NC
	OAK RIDGE	TN
	WELCH	WV
4.87 /5.47	LILLINGTON	NC
	MOUNTAIN CITY	TN
	KINGSTON/LICK KB	WV
4.89 /5.49	RALEIGH (CITY)	NC
	MEMPHIS	TN
	SHORT MT	TN
	BLUEFIELD	VA
	BLUEFIELD	WV
5.93 /7.93	BUCKHANNON	WV
	PARSONS	WV
6.01 /6.61	GREENSBORO	NC
	NEW BERN	NC
	GRNVLE/CSRS HD	SC
	MYRTLE BEACH	SC
	CHATTANOOGA	TN
6.01 /7.51	MEMPHIS	TN
6.01 /6.61	NASHVILLE	TN
	BRUMLEY MT	VA
	LYNCHBURG	VA
	VIRGINIA BEACH	VA
	SPENCER	WV
6.025/6.625	HENDERSONVILLE	NC
	LAURINBURG	NC
	NEW MARKET	VA
6.04 /6.64	HENDERSONVILLE	NC
	RALEIGH	NC
	WINSTON-SALEM	NC
	SUMTER	SC
	CROSSVILLE	TN
	MADISON	TN
	MEMPHIS	TN
	FINCASTLE	VA
	MARION	VA
	RICHMOND	VA
	ELKINS	WV
	HUNTINGTON	WV
6.055/6.655	CONCORD/KANNAP	NC
	ALEXANDRIA	VA
6.06 /6.66	CHARLESTON	SC
6.07 /6.67	BURLINGTON	NC
	FOREST CITY	NC
	COLUMBIA	SC
	BRISTOL	TN
	COOKEVILLE	TN
	LAFOLLETTE	TN
	NASHVILLE	TN
	BARREN SPRINGS	VA
	BRISTOL	VA
	LEXINGTON	VA
	WILLIAMSBURG	VA
	RAVENSWOOD	WV
6.085/6.685	GRIFTON	NC
	STATESVILLE	NC
	ALEXANDRIA	VA
6.085/7.955	MORGANTOWN	WV
6.10 /6.70	DUNN	NC
	GREENVILLE	SC
	LANCASTER	SC
	GREENEVILLE	TN
	MANCHESTER	TN
	MEMPHIS	TN
	UNION CITY	TN
	DANVILLE	VA
	NORFOLK	VA
6.115/6.715	SPRING LAKE	NC
	BLACKSBURG	VA
	STERLING	VA
6.12 /6.72	COAL MTN	WV
6.13 /6.73	RALEIGH	NC
	SALISBURY	NC
	WILMINGTON	NC
	C. PIED/SMPSNVLE	SC
	N. AUGUSTA	SC
	KNOXVILLE	TN
	LEBANON	TN
	MEMPHIS	TN
	HAMPTON	VA
	ALDERSON	WV
6.145/6.745	DILLON/PEE DEE	SC
	CLARKSVILLE	VA
6.16 /6.76	ASHVL/MT PISGAH	NC
	GREENSBORO	NC
	GRIFTON	NC
	CHARLESTON	SC
	COLUMBIA	SC
	BRISTOL/HLSTN MT	TN
	NASHVILLE	TN
	CHARLOTTESVILLE	VA
	FOREST	VA
	EAST RIVER MTN*	WV
	HUNTINGTON	WV
	MORGANTOWN	WV
	WHEELING	WV
6.175/6.775	ELIZABETHTOWN	NC
	WYTHEVILLE	VA
6.19 /6.79	LEVEL CROSS/GBO	NC
	ANDSN/SASFRAS MT	SC
	CHARLESTON	SC
	SWAINSBORO(GA)	SC
	CHATTANOOGA	TN
	JOHNSON CTY	TN
6.19 /7.51	MEMPHIS	TN
6.19 /6.79	NASHVILLE	TN
	CHESAPEAKE	VA
	FAIRFAX	VA
	OAK HILL	WV
6.205/6.805	GASTONIA	NC
	WASHINGTON	NC
6.22 /6.82	DURHAM	NC
	ROARING GAP	NC
	WILMINGTON	NC
	GRNVLE/PARIS MT	SC

HICKORY	WR4ACM	222.42	224.02	N	
HIGH POINT	K4AZA	222.32	223.92		LPA
HILLSBOROUGH	WA4WTX	222.34	223.94		L
LOCUST	WR4BBA	222.40	224.00		
MORGANTON	WB4PML	223.36	224.96		
RALEIGH	WA4PEN	223.04	224.64	N	
SALISBURY	W4EXU	223.16	224.76		
SAURATOWN MT	W4RXG	223.28	224.88		
STATESVILLE	WA4WRS	222.70	224.30	N	
SYLVA	KA4V	223.34	224.94	N	
TRYON	WB4BYH	222.86	224.46	N	P
WINSTON-SALEM	WB4UGW	222.44	222.04	N	P
WINSTON-SALEM	WA4YHH	223.04	224.64	N	
WINSTON-SALEM	WA4GIC	223.10	224.70	N	R

440 MHZ

ASHVL/MT PISGAH	WR4ALE	449.90	444.90	N	
CHARLOTTE	WR4AEU	449.60	444.60		P
CHARLOTTE	WR4ALO	449.85	444.85	N	
DURHAM	WR4	449.00	444.00	N	P
HIGH POINT	K4AZA	447.90	442.90		L
HILLSBOROUGH	WA4WTX	449.10	444.10		PA
SALISBURY	W4EXU	449.70	444.70		P
SAURATOWN MT	W4RXG	448.00	443.00		C

SIX METERS

CARY	WR4AVP	52.35	53.35	N	
HENDERSONVILLE	WB4YAO	52.01	53.01		
HENDERSONVILLE	WB4YAO	52.525	52.525		RB
HICKORY	WR4ACM	52.47	53.47	N	
HIGH POINT	K4AZA	52.15	53.15		L
HILLSBOROUGH	WA4WTX	52.525	52.525		RB
NEWPORT	K4GRW	52.01	53.01	N	P
RALEIGH	WR4AOE	52.05	53.05	N	
RALEIGH	WA4PEN	52.25	53.25	N	C

10 METERS

DURHAM	W4PVI	29.60	29.60	N	RBL
NEWPORT	K4GRW	29.56	29.66	N	P

SOUTH CAROLINA REPEATERS

TWO METERS

ANDERSON	WR4AIO	146.37	146.97	N	PA
ANDSN/SASFRAS MT	WR4AIO	146.19	146.79	N	
BLAIRSVILLE(GA)	WA4EZN	147.69	147.09		LEA
C. PIED/SMPSNVLE	WD4BJY	146.13	146.73		EA
CAROWINDS	WR4ABK	147.78	147.18	N	
CHARLESTON	WR4	146.06	146.66	N	A
CHARLESTON	K4ILT	146.16	146.76	N	A
CHARLESTON	WR4AUV	146.19	146.79	N	
CHARLESTON	N4SC	146.34	146.94	N	T
CHARLESTON	WR4BCP	147.87	147.27		A
CHERAW	WD4HEH	147.735	147.135		
COLUMBIA	WB4URY	146.07	146.67		
COLUMBIA	WR4AYE	146.16	146.76		
COLUMBIA	K4AVU	146.28	146.88	N	
COLUMBIA	K4ICL	146.34	146.94		
COLUMBIA	WR4AYE	147.84	147.24	N	
COLUMBIA	WB4VLY	147.93	147.33		
COLUMBIA	K4ICL	147.96	147.36		A
DILLON/PEE DEE	KA4BGA	146.145	146.745		
DORCHESTER	W4NAT	147.78	147.18	N	
FLORENCE	W4ULH	146.25	146.85	N	
FLORENCE	WA4ISM	146.37	146.97	N	PA
GASTON	WB4NEP	144.61	145.21	N	PA
GREENVILLE	W4AZT	146.10	146.70		A
GREENVILLE	WR4	147.675	147.075	N	PA
GREENWOOD	WR4AUE	147.765	147.165	N	PA
GREER	W4IQQ	146.34	146.94	N	
GRNVLE/CSRS HD	W4NYK	146.01	146.61		EA
GRNVLE/PARIS MT	W4NYK	146.22	146.82		PA
HARTWELL(GA)	KY4T	146.895	146.295		
HODGES	KB4YF	144.53	145.13	N	C
LANCASTER	W4PAX	146.10	146.70		
LANCASTER	WB4BGF	147.84	147.24		
LAURENS	WA4UZA	146.25	146.85	N	A
LEXINGTON	WR4AGK	147.255	146.835	N	
LITTLE MT	K4AVU	147.81	147.21	N	
LONG MT	WA4JRJ	147.87	147.27	N	
LYMAN	KS4I	147.885	147.285		
MARION	W4YLT	146.40	147.00		
MONCKS CORNER	WA4DDK	147.75	147.15	N	A
MYRTLE BEACH	WA4KGN	146.01	146.61	N	
MYRTLE BEACH	WA4YEE	147.72	147.12	N	
MYRTLE BEACH, N	WA4JYR	147.63	147.03		PA
N. AUGUSTA	K4FKJ	146.13	146.73		
N. AUGUSTA	WR4ALS	147.72	147.12	N	
NORTHWEST SECT.	W4GZL	144.51	145.11		P
ORANGEBURG	WR4AQY	147.69	147.09	N	A
PICKENS	WB4YXZ	146.40	147.00		
ROCK HILL	WR4	144.71	145.31	N	
ROCK HILL	WC4ABD	146.43	147.03		PA
SPARTANBURG	K4JLA	147.69	147.09	N	PA
SUMMERVILLE	WR4	146.25	146.85	N	
SUMTER	WR4AOI	146.04	146.64		
SUMTER	WA4UMU	147.615	147.015		PA
SUMTER/SHAW	W4VFR	147.66	147.06	N	
TOCCOA(GA)	KA4DIP	147.93	147.33		
WHITE HALL	WR4AQL	146.31	146.91	N	

220 MHZ

COLUMBIA	WB4URY	222.30	223.90		
SASSAFRAS MTN	KJ4X	222.46	224.06		

440 MHZ

CHARLESTON	N4SC	449.10	444.509	N	T
ROCK HILL	KA4RFA	442.25	447.25		
SUMMERVILLE	WR4	449.00	444.00	N	P

10 METERS

ANDERSON	N4JK	29.53	29.63	N	

TENNESSEE REPEATERS

TWO METERS

ALTAMONT	WR4AWN	146.37	146.97	N	
BLONTVILLE	WA4KMG	147.60	147.00		
BRISTOL	K4ILW	146.07	146.67		A
BRISTOL	W4SZP	146.28	146.88		A
BRISTOL/HLSTN MT	WR4ADO	146.16	146.76	N	EA
BROWNSVILLE	WA4ABU	146.655	146.055	N	
CENTERVILLE	WB4PZB	147.915	147.315	N	
CHATTANOOGA	KB4TZ	144.79	145.39		A
CHATTANOOGA	KB4TZ	146.01	146.61		
CHATTANOOGA	KB4TZ	146.19	146.79		A
CHATTANOOGA	WA4ZOK	147.60	147.00		PA
CLARKSVILLE	WR4AOO	147.60	147.00	N	
CLEVELAND	WR4AQV	147.78	147.18	N	
COLUMBIA	WR4AIX	147.72	147.12	N	
COOKEVILLE	WR4ANW	146.07	146.67	N	
COOKEVILLE	WB4QSJ	147.81	147.21	N	
COVE MTN	WA4KJH	146.25	146.85		A
CROSSVILLE	WR4AKQ	146.04	146.64	N	
CROSSVILLE	WR4BEL	147.93	147.33	N	
DAYTON/RHEA CTY	N4OU	147.99	147.39	N	
FAYETTEVILLE	WR4BAQ	147.63	147.03	N	
FISHERVILLE	N4DRL	144.65	145.25	N	

TENNESSEE *Continued*

GALLATIN	WB4TLQ	147.84	147.24	N	
GALLATIN	WA4YQC	147.87	147.27	N	
GREENEVILLE	W4ANB	146.10	146.70	N	
GREENEVILLE	WA4LYF	147.66	147.06		A
HENDERSONVILLE	WR4BCX	147.63	147.03	N	
HORNBEAK	WA4OXK	146.865	146.265	N	
JACKSON	WR4AQN	147.81	147.21	N	
JOHNSON CTY	WB4IKB	146.19	146.79		
JOHNSON CTY	WA4DIU	147.87	147.27		A
JONESBORO	WB4SQC	147.99	147.39		PA
KNGSPT/BAYS MT	W4TRC	146.37	146.97	N	A
KNOXVILLE	WB4JSD	144.51	145.11		R
KNOXVILLE	K4KFD	144.61	145.21		AC
KNOXVILLE	WB4IOB	146.13	146.73		
KNOXVILLE	K4HXD	146.34	146.94		
KNOXVILLE	WA4TEM	146.40	147.54		A
KNOXVILLE	K4HXD	147.675	147.075		A
KNOXVILLE	W4BBB	147.90	147.30		
LAFOLLETTE	W4TZG	146.07	146.67		
LAKE CITY	WB4OAH	146.22	146.82	N	
LEBANON	WR4BBM	146.13	146.73	N	
LEXINGTON	WB4LGH	146.43	147.03	N	
MADISON	WR4AKN	146.04	146.64	N	
MANCHESTER	WR4ACI	146.10	146.70		A
MARTIN	WA4ZQX	146.625	146.025	N	
MEDINA	K4BEZ	146.37	146.97	N	
MEMPHIS	WR4AZK	144.89	145.49	N	
MEMPHIS	WR4AHK	146.01	147.51	N	
MEMPHIS	W4GYS	146.04	146.64	N	
MEMPHIS	WR4AOG	146.10	146.70	N	R
MEMPHIS	WR4AGR	146.13	146.73	N	
MEMPHIS	WR4ABS	146.19	147.51	N	
MEMPHIS	WR4AHO	146.22	146.82	N	
MEMPHIS	WR4AZK	146.25	146.85	N	
MEMPHIS	WA4ETE	146.28	146.88	N	
MEMPHIS	K4BN	146.34	146.94	N	
MEMPHIS	K4FZJ	146.40	147.00	N	
MEMPHIS	WR4AXF	146.46	147.06	N	
MEMPHIS	WR4BCU	147.63	147.03	N	
MEMPHIS	WR4AWT	147.67	147.09	N	
MEMPHIS	WB4DAZ	147.72	147.12	N	
MEMPHIS	WR5AII	147.75	147.15	N	
MEMPHIS	WR4AZK	147.78	147.17	N	
MEMPHIS	WD4APK	147.84	147.24	N	
MEMPHIS	WR4AZC	147.87	147.27	N	
MEMPHIS	WR4ASF	147.90	147.30	N	
MEMPHIS	WR4ATA	147.96	147.36	N	
MEMPHIS	WR4ASR	147.99	147.39	N	
MORRISTOWN	WB4OAH	147.63	147.03	N	
MORRISTOWN	WB4OAH	147.825	147.225	N	
MOUNTAIN CITY	WD4OMO	144.87	145.47	N	
MURFREESBORO	WB4LHO	144.57	145.17	N	
NASHVILLE	WB4HTX	144.83	145.43	N	P
NASHVILLE	WA4FCD	146.01	146.61	N	
NASHVILLE	WR4AKN	146.07	146.67	N	
NASHVILLE	WB4QES	146.16	146.76	N	
NASHVILLE	WR4AFA	146.19	146.79	N	
NASHVILLE	N4TK	146.25	146.85	N	
NASHVILLE	WB4QES	146.28	146.88	N	
NASHVILLE	WA4PCD	146.34	146.94	N	
NASHVILLE	AF4K	147.615	147.015	N	
NASHVILLE	WB4JVP	147.75	147.15	N	
NASHVILLE	WA4PCD	147.78	147.18	N	
NASHVILLE	WB4ZSA	147.90	147.30	N	A
NASHVILLE	WR4AKN	147.96	147.36	N	
NASHVILLE	WR4	147.975	147.375	N	
NASHVILLE	WB4DLQ	147.99	147.39	N	
NEWBERN	AA4HF	146.745	146.145	N	
OAK RIDGE	WR4ADQ	144.85	145.45	N	
OAK RIDGE	W4SKH	146.28	146.88		A
OAK RIDGE	K4EAJ	147.72	147.12		
OAK RIDGE	K4EAJ	147.75	147.15		R
PARIS	WR4AYM	147.96	147.36	N	
PULASKI	W4JVO	146.715	146.115	N	
SAVANNAH	WA4HGN	146.31	146.91	N	
SHELBYVILLE	WR4AQM	147.66	147.06	N	
SHORT MT	W4KKO	144.89	145.49	N	
SHORT MT.	WR4AZF	146.31	146.91		
SPARTA	W4BSA	147.69	147.09		
SPRINGFIELD	WR4AGH	147.63	147.03	N	
UNION CITY	WR4AUQ	146.10	146.70	N	
WAVERLY	WB4PRF	146.685	146.085	N	
WINCHESTER	WR4AFH	146.22	146.82	N	

220 MHZ

CHATTANOOGA	K4VCM	223.18	224.78		A
CHATTANOOGA	WA4ZOK	223.30	224.90		
GREENEVILLE	WB4NKM	223.34	224.94		A
KNOXVILLE	WA4YON	222.86	224.46		
KNOXVILLE	K4HXD	223.16	224.76		P
NASHVILLE	WB4ZSA	222.38	223.98	N	A

440 MHZ

ALAMO	WB4EDS	448.75	443.75	N	L
CHATTANOOGA	WA4ZOK	439.25	427.25		V
GREENEVILLE	K4OTM	439.25	427.25	N	V
GREENEVILLE	KB4UG	449.20	444.20	N	C
KNGSPT/HLSTON MT	WR4ADO	449.50	444.50	N	EA
KNOXVILLE	K4HXD	449.30	444.30		
MEDINA	K4BEZ	447.05	442.05	N	AL
MEMPHIS	WB4BDO	448.40	443.40	N	A
MEMPHIS	WD4APK	449.30	444.30	N	
MEMPHIS	WA4FNL	449.50	444.50	N	A
NASH/GALLATIN	WD4KWP	449.45	444.45	N	

SIX METERS

CHATTANOOGA	WB4LRD	52.01	53.01	N	
KNOXVILLE	WB4IOB	52.15	53.15		
KNOXVILLE	WA4YON	52.64	53.64		
KNOXVILLE	K4HXD	52.76	52.525		
LAFOLLETTE	K4BGW	52.17	53.17		
MEMPHIS	WR4AZK	52.01	53.01	N	

VIRGINIA REPEATERS

TWO METERS

AFTON MT	W4PNT	147.675	147.075	N	
ALEXANDRIA	WR4AXB	146.055	146.655	M	
ALEXANDRIA	W4HFH	146.085	146.685	M	
ALEXANDRIA	W4HFH	147.915	147.315	M	
ARLINGTON	WA4YVN	146.445	147.045	M	
BARREN SPRINGS	WR4AFQ	146.07	146.67		
BARREN SPRINGS	K4HZS	147.78	147.18		
BERRYVILLE	WR4APE	147.90	147.30	M	
BLACKSBURG	WA4YRJ	146.115	146.715		
BLAND	N4AZJ	144.75	145.35	N	
BLUE RIDGE	WA4MCP	147.765	147.165	N	C
BLUEFIELD	W8MOP	144.89	145.49		A
BLUEFIELD	WD8OGY	146.415	147.015		PA
BRIARPATCH MT	WR4AHR	147.69	147.09		
BRISTOL	K4ILW	146.07	146.67		A
BRISTOL	W4SZP	146.28	146.88		
BRUMLEY MT	WR4ATJ	146.01	146.61	N	
BUFFALO MT	N4AZI	144.61	145.21	N	
CHARLOTTESVILLE	WR4ATL	146.16	146.76		
CHARLOTTESVILLE	WR4ATL	146.325	146.925		
CHESAPEAKE	N4SD	146.19	146.79		
CHRISTIANSBURG	WA4HBC	147.855	147.255	N	C
CLARKSVILLE	WD4BHL	146.145	146.745	N	C
CLIFTON FORGE	K4QEL	147.90	147.30		

	LYONS(GA)	SC
	LAKE CITY	TN
	MEMPHIS	TN
	WINCHESTER	TN
	COVINGTON	VA
	WINCHESTER	VA
	CHARLESTON	WV
	CLARKSBURG	WV
6.235/6.835	ASHEVILLE	NC
	WADESBORO	NC
	HAZEL MT	VA
6.25 /6.85	GOLDSBORO	NC
	HICKORY/BRT. MT	NC
	REIDSVILLE	NC
	FLORENCE	SC
	LAURENS	SC
	SUMMERVILLE	SC
	COVE MTN	TN
	MEMPHIS	TN
	NASHVILLE	TN
	HARRISONBURG	VA
	PORTSMOUTH	VA
	STAUNTON	VA
	BKLY/FLAT TOP MT	WV
6.25 /7.85	BUCKHANNON	WV
6.265/6.865	HIGH POINT	NC
6.28 /6.88	RALEIGH	NC
	SHELBY	NC
	COLUMBIA	SC
	SAVANNAH(GA)	SC
	BRISTOL	TN
	MEMPHIS	TN
	NASHVILLE	TN
	OAK RIDGE	TN
	BRISTOL	VA
	RICHMOND	VA
	SALEM	VA
	CHARLESTON	WV
6.31 /6.91	AHOSKIE	NC
	ASHEVILLE	NC
	FAYETTEVILLE	NC
	LEXINGTON	NC
	WHITE HALL	SC
	SAVANNAH	TN
	SHORT MT	TN
	FAIRFAX	VA
	FARMVILLE	VA
	JONESVILLE	VA
	RIPPLEMEADE	VA
	COTTAGEVILLE	WV
	FAIRMONT	WV
	MCMECHEN	WV
6.325/6.925	CHARLOTTESVILLE	VA
	DANVILLE(DCC)	VA
6.34 /6.94	BURGAW	NC
	CHARLOTTE	NC
	DURHAM	NC
	MANTEO	NC
	CHARLESTON	SC
	COLUMBIA	SC
	GREER	SC
	KNOXVILLE	TN
	MEMPHIS	TN
	NASHVILLE	TN
	HAMPTON	VA
	RICHMOND	VA
	ROANOKE	VA
	BECKLEY	WV
	NEW MARTINSVLLE	WV
	RICHWOOD	WV
	WEIRTON	WV
6.355/6.955	ROCKINGHAM	NC
6.37 /6.97	MT AIRY	NC
	SMITHFIELD	NC
	ANDERSON	SC
	FLORENCE	SC
	SAVANNAH(GA)	SC
	ALTAMONT	TN
	KNGSPT/BAYS MT	TN
	MEDINA	TN
	MANASSAS	VA
	VIRGINIA BEACH	VA
	LOGAN	WV
	PARKERSBURG	WV
6.385/6.985	ALBEMARLE	NC
	ROANOKE/POOR MT	VA
6.40 /7.00	HIGH POINT	NC
	JACKSONVILLE	NC
	MARION	SC
	PICKENS	SC
6.40 /7.54	KNOXVILLE	TN
6.40 /7.00	MEMPHIS	TN
	SUFFOLK	VA
	ST ALBANS	WV
6.415/7.015	DURHAM	NC
	BLUEFIELD	VA
	BLUEFIELD	WV
6.43 /7.03	ERWIN	NC
	ROCK HILL	SC
	LEXINGTON	TN
6.445/7.045	HOPE MILLS	NC
	ROBBINSVILLE	NC
	ARLINGTON	VA
6.46 /7.06	CHARLOTTE	NC
	ELIZABETH CITY	NC
	MEMPHIS	TN
	SOUTH BOSTON	VA
	PRINCETON	WV
6.475/7.075	BURLINGTON	NC
6.49 /7.49	AHOSKIE	NC
6.625/6.025	MARTIN	TN
6.655/6.055	BROWNSVILLE	TN
6.685/6.085	WAVERLY	TN
6.715/6.115	PULASKI	TN
6.745/6.145	NEWBERN	TN
6.865/6.265	HORNBEAK	TN
6.895/6.295	HARTWELL(GA)	SC
7.255/6.835	LEXINGTON	SC
7.30 /7.90	MONROE	NC
7.60 /7.00	HIGH POINT	NC
	BLONTVILLE	TN
	CHATTANOOGA	TN
	CLARKSVILLE	TN
	TERRA ALTA	WV
7.615/7.015	SUMTER	SC
	NASHVILLE	TN
	FREDRICKSBURG	VA
7.63 /7.03	GREENSBORO	NC
	ROANOKE RAPIDS	NC
	MYRTLE BEACH, N	SC
	FAYETTEVILLE	TN
	HENDERSONVILLE	TN
	MEMPHIS	TN
	MORRISTOWN	TN
	SPRINGFIELD	TN
	WAYNESBORO	VA
	MULLENS	WV
7.645/7.045	ELLIS KNOB	VA
	VIRGINIA BEACH	VA
7.66 /7.06	MACO	NC
	SUMTER/SHAW	SC
	GREENEVILLE	TN
	SHELBYVILLE	TN
	RICHMOND	VA
7.67 /7.09	MEMPHIS	TN
7.675/7.075	BURLINGTON	NC
	GREENVILLE	SC
	KNOXVILLE	TN
	AFTON MT	VA
7.69 /7.09	GREENVL/ESTN NC	NC
	BLAIRSVILLE(GA)	SC
	ORANGEBURG	SC
	SPARTANBURG	SC
	SPARTA	TN
	BRIARPATCH MT	VA
7.705/7.105	MONROE	NC
	JOHNSONS MT	VA
	BRIDGEPORT	WV
7.72 /7.12	GAST/SPCR MT	NC
	ROCKY MOUNT	NC
	MYRTLE BEACH	SC
	N. AUGUSTA	SC
	COLUMBIA	TN
	MEMPHIS	TN
	OAK RIDGE	TN
	CULPEPPER	VA
	BRIDGEPORT	WV
	DUNBAR	WV
7.735/7.135	BREVARD/RICH MT	NC
	CHERAW	SC
7.75 /7.15	MORGANTON	NC
	RALEIGH	NC
	MONCKS CORNER	SC
	MEMPHIS	TN
	NASHVILLE	TN
	OAK RIDGE	TN
	TAZEWELL	VA
7.765/7.165	GREENWOOD	SC
	BLUE RIDGE	VA
	WARRENTON	VA
7.78 /7.18	MT AIRY	NC
	SANFORD	NC
	CAROWINDS	SC
	DORCHESTER	SC
	CLEVELAND	TN
7.78 /7.17	MEMPHIS	TN
7.78 /7.18	NASHVILLE	TN
	BARREN SPRINGS	VA
	PETERSBURG	VA
	LEON	WV
7.795/7.195	LAKE TOXAWAY	NC
7.81 /7.21	GREENSBORO	NC
	GREENVILLE	NC
	LITTLE MT	SC
	COOKEVILLE	TN
	JACKSON	TN
	HIGH KNOB	VA
	MCLEAN	VA
7.825/7.225	HILLSBOROUGH	NC
	MORRISTOWN	TN
7.84 /7.24	CHARLOTTE	NC
	EDEN	NC
	FOREST CITY	NC
	FRANKLIN	NC
	PINE BLUFF	NC
	COLUMBIA	SC
	LANCASTER	SC
	GALLATIN	TN
	MEMPHIS	TN
	LYNCHBURG	VA
	PETERSBURG	VA
	WOODBRIDGE	VA
7.855/7.255	ASHEBORO	NC
	CHRISTIANSBURG	VA
	SHENANDOAH	VA
	MARTINSBURG	WV
7.87 /7.27	BENSON	NC
	GASTONIA	NC
	WAYNESVILLE	NC
	CHARLESTON	SC
	LONG MT	SC
	GALLATIN	TN
	JOHNSON CTY	TN
	MEMPHIS	TN
	GUM SPRING	VA
	SCOTT DEPOT	WV
7.885/7.285	LYMAN	SC
	MARTINSVILLE	VA
7.90 /7.30	GASTONIA	NC
	JACKSONVILLE	NC
	SYLVA	NC
	TUCKASEGEE	NC
	KNOXVILLE	TN
	MEMPHIS	TN
	NASHVILLE	TN
	BERRYVILLE	VA
	CLIFTON FORGE	VA
	FRANKLIN	VA
	GRUNDY	VA
	HUNTINGTON	WV
	PENNSBORO	WV
7.915/7.315	UNION CROSS	NC
	CENTERVILLE	TN
	ALEXANDRIA	VA
7.93 /7.33	FAYETTEVILLE	NC
	LENOIR	NC
	COLUMBIA	SC
	TOCCOA(GA)	SC
	CROSSVILLE	TN
	COLE MTN	VA
	KLMNRK/SALUDA	VA
7.945/7.345	SHELBY	NC
	GATE CITY	VA
	FRANKLIN	WV
7.95 /7.35	DANVILLE	VA
7.96 /7.36	BOONE	NC
	FRANKLIN	NC
	GREENVILLE	NC
	LUMBERTON	NC
	COLUMBIA	SC
	MEMPHIS	TN
	NASHVILLE	TN
	PARIS	TN
	PARKERSBURG	WV
7.975/7.375	BURNSVILLE	NC
	NASHVILLE	TN
	LYNCHBURG	VA
	GRAFTON	WV
7.99 /7.39	CHARLOTTE	NC
	EDEN/STONEVILLE	NC
	DAYTON/RHEA CTY	TN
	JONESBORO	TN
	MEMPHIS	TN
	NASHVILLE	TN
	PETERSBURG	VA

10 METERS

9.53 /9.63	ANDERSON	SC
9.56 /9.66	NEWPORT	NC
9.60 /9.60	DURHAM	NC
	CHARLOTTESVILLE	VA

6 METERS

2.01 /3.01	HENDERSONVILLE	NC
	NEWPORT	NC
	CHATTANOOGA	TN
	MEMPHIS	TN
	ABINGTON	VA
	LEXINGTON	VA
2.05 /3.05	RALEIGH	NC
	COLUMBIA	SC
2.07 /3.07	SOUTH BOSTON	VA
2.13 /3.13	ALEXANDRIA	VA
	DANVILLE(DCC)	VA
2.15 /3.15	HIGH POINT	NC
	KNOXVILLE	TN
	LYNCHBURG	VA
2.17 /3.17	LAFOLLETTE	TN
2.25 /3.25	RALEIGH	NC
2.35 /3.35	CARY	NC
2.47 /3.47	HICKORY	NC
2.525/2.525	HENDERSONVILLE	NC
	HILLSBOROUGH	NC
	CHARLOTTESVILLE	VA
2.58 /2.48	FAIRFAX	VA
2.64 /3.64	KNOXVILLE	TN
2.76 /2.525	KNOXVILLE	TN
3.525/2.525	NORFOLK	VA

220 MHZ

2.22 /3.82	FALLS CHURCH	VA
2.30 /3.90	COLUMBIA	SC
2.32 /3.92	HIGH POINT	NC
2.34 /3.94	ASHVL/MT PISGAH	NC
	HILLSBOROUGH	NC
	FAIRFAX	VA
	SUFFOLK	VA
2.36 /3.96	CHARLOTTE	NC
2.38 /3.98	NASHVILLE	TN
2.40 /4.00	LOCUST	NC
2.42 /4.02	FAYETTEVILLE	NC
	HICKORY	NC
2.44 /2.04	WINSTON-SALEM	NC
2.46 /4.06	SASSAFRAS MTN	SC
2.54 /4.14	HUNTINGTON	WV
2.70 /4.30	STATESVILLE	NC
2.74 /4.34	GALAX	VA
2.86 /4.46	TRYON	NC
	KNOXVILLE	TN
3.02 /4.62	PORTSMOUTH	VA
3.04 /4.64	RALEIGH	NC
	WINSTON-SALEM	NC
3.10 /4.70	WINSTON-SALEM	NC
3.16 /4.76	SALISBURY	NC
	KNOXVILLE	TN
3.18 /4.78	CHATTANOOGA	TN
3.20 /4.80	CHERRYVILLE	NC
3.22 /4.82	GREENSBORO	NC
	ALEXANDRIA	VA
3.28 /4.88	SAURATOWN MT	NC
3.30 /4.90	CHATTANOOGA	TN
3.34 /4.94	SYLVA	NC
	GREENEVILLE	TN
	LYNCHBURG	VA
3.36 /4.96	MORGANTON	NC

440 MHZ

9.25 /7.25	CHATTANOOGA	TN
	GREENEVILLE	TN
9.25 /6.27	ALEXANDRIA	VA
2.25 /7.25	ROCK HILL	SC
2.50 /7.50	ROANOKE/POORE MT	VA
4.225/9.225	MANASSAS	VA
4.75 /9.75	FAIRFAX	VA
4.85 /9.85	ANNANDALE	VA
4.90 /9.90	WOODBRIDGE	VA
7.05 /2.05	MEDINA	TN
7.25 /2.25	COVINGTON	VA
	SOUTH BOSTON	VA
7.75 /2.75	ROANOKE	VA
7.90 /2.90	HIGH POINT	NC
8.00 /3.00	SAURATOWN MT	NC
8.40 /3.40	MEMPHIS	TN
8.50 /3.50	TYSONS CORNER	VA
8.75 /3.75	ALAMO	TN
8.90 /3.90	TAZEWELL	VA
9.00 /4.00	DURHAM	NC
	SUMMERVILLE	SC
	ARLINGTON	VA
9.05 /4.05	WAYNESBORO	VA
9.10 /4.10	HILLSBOROUGH	NC
9.10 /4.509	CHARLESTON	SC
9.15 /4.15	COLE MTN	VA
9.20 /4.20	GREENEVILLE	TN
9.25 /4.25	CHARLOTTESVILLE	VA
	PORTSMOUTH	VA
9.30 /4.30	KNOXVILLE	TN
	MEMPHIS	TN
	WAYNESBORO	VA
9.35 /4.35	LYNCHBURG	VA
9.45 /4.45	NASH/GALLATIN	TN
	FALLS CHURCH	VA
9.50 /4.50	KNGSPT/HLSTON MT	TN
	MEMPHIS	TN
	LYNCHBURG	VA
	PETERSBURG	VA
9.60 /4.60	CHARLOTTE	NC
	ALEXANDRIA	VA
9.70 /4.70	SALISBURY	NC
9.85 /4.85	CHARLOTTE	NC
	PETERSBURG	VA
9.90 /4.90	ASHVL/MT PISGAH	NC
9.95 /4.95	STAUNTON	VA
	VIRGINIA BEACH	VA

NORTH CAROLINA REPEATERS

TWO METERS

AHOSKIE	WR4AFB	146.31	146.91	N	PA
AHOSKIE	WB4YNF	146.49	147.49		AT
ALBEMARLE	WR4BBX	146.385	146.985		
ANDERSON MTN	WD4LCF	144.85	145.45		
ASHEBORO	WD4AIB	147.855	147.255		PA
ASHEVILLE	WA4QCO	146.235	146.835		
ASHEVILLE	NC4N	146.31	146.91		A
ASHVL/MT PISGAH	WA4BVW	146.16	146.76		
BENSON	WR4ARL	147.87	147.27	N	PA
BOONE	WB4DYD	147.96	147.36		
BREVARD/RICH MT	WD4IHH	147.735	147.135		
BRYSON CITY	K4BBF	144.70	145.30	N	P
BURGAW	K4LZY	146.34	146.94		
BURLINGTON	WR4AKY	146.07	146.67	N	
BURLINGTON	W4VGZ	146.475	147.075		EA
BURLINGTON	WA4HBQ	147.675	147.075		EA
BURNSVILLE	WA4LLR	147.975	147.375	N	
BUTNER	WA4IZG	144.57	145.17	N	P
CHARLOTTE	WR4AEU	144.63	145.23		
CHARLOTTE	WB4HTR	144.75	145.35	N	
CHARLOTTE	WR4AEU	146.34	146.94	N	A
CHARLOTTE	WR4ALO	146.46	147.06	N	A
CHARLOTTE	WB4KPF	147.84	147.24		A
CHARLOTTE	WB4KOH	147.99	147.39		PA
CHERRYVILLE	WB4GXY	144.55	145.15	N	
CONCORD/KANNAP.	K4CEB	146.055	146.655		A
DUNN	WB4FXM	146.10	146.70	N	
DURHAM	WA4WTX	146.22	146.82		
DURHAM	WA4BFT	146.34	146.94	N	A
DURHAM	W4PVI	146.415	147.015	N	L
EDEN	WA4ACP	147.84	147.24	N	
EDEN/STONEVILLE	WD4DIP	147.99	147.39		
ELIZABETH CITY	WA4VTX	146.46	147.06	N	A
ELIZABETHTOWN	W4DCD	146.175	146.775	N	P
ERWIN	WR4ALY	146.43	147.03	N	
FAYETTEVILLE	WR4ANN	146.31	146.91		A
FAYETTEVILLE	W4LPL	147.93	147.33		
FISHER PEAK	WD4MDP	144.73	145.33		
FOREST CITY	W4TMT	146.07	146.67	N	A
FOREST CITY	WA4BKU	147.84	147.24	N	
FRANKLIN	WB4YAO	147.84	147.24		
FRANKLIN	N4AC	147.96	147.36		
GAST/SPCR MT	W4REW	147.72	147.12		A
GASTONIA	K4ZFD	146.205	146.805	N	L
GASTONIA	WD4KGM	147.87	147.27	N	
GASTONIA	WR4	147.90	147.30	N	P
GOLDSBORO	K4CYP	146.25	146.85		A
GREENSBORO	KZ4O	144.65	145.25	N	C
GREENSBORO	K4SNI	146.01	146.61		A
GREENSBORO	WR4AOD	146.16	146.76		
GREENSBORO	WD4IPZ	147.63	147.03		A
GREENSBORO	WR4ANL	147.81	147.21	N	
GREENVILLE	WD4JPQ	147.81	147.21	N	P
GREENVILLE	W4AMC	147.96	147.36	N	
GREENVL/ESTN NC	W4GDF	147.69	147.09		
GRIFTON	W4NBR	146.085	146.685		
GRIFTON	WR4ABP	146.16	146.76		O
HENDERSONVILLE	WB4YAO	146.025	146.625		P
HENDERSONVILLE	WB4YAO	146.04	146.64		L
HICKORY/BRT. MT	WR4ACM	146.25	146.85	N	
HIGH POINT	N4XO	144.51	145.11	N	P
HIGH POINT	WA4ZXA	146.265	146.865		PA
HIGH POINT	K4AZA	146.40	147.00		LPA
HIGH POINT	K4AZA	147.60	147.00		LPA
HILLSBOROUGH	WA4WTX	147.825	147.225		A
HOPE MILLS	WB4TRW	146.445	147.045		
JACKSONVILLE	WD4FVO	146.40	147.00		PA
JACKSONVILLE	WR4ATW	147.90	147.30	N	
LAKE TOXAWAY	WR4AGH	147.795	147.195		
LAURINBURG	WR4AOX	146.025	146.625	N	
LENOIR	WR4ARG	147.93	147.33		
LEVEL CROSS/GBO	K4VUW	146.19	146.79		
LEXINGTON	WD4NTE	144.81	145.41	N	P
LEXINGTON	K4IZM	146.31	146.91		PA
LILLINGTON	WA4FKI	144.87	145.47	N	
LINCOLNTON	WD4PLY	144.85	145.45	N	
LUMBERTON	WR4BDQ	147.96	147.36	N	A
MACO	WA4LED	147.66	147.06		
MANTEO	W4PCN	146.34	146.94		PA
MONROE	K4BGU	147.30	147.90	N	
MONROE	WR4BBN	147.705	147.105		A
MORGANTON	WB4PML	144.57	145.17	N	LP
MORGANTON	K4RP	147.75	147.15		
MT AIRY	WB4UJH	146.37	146.97		EA
MT AIRY	WA4CQK	147.78	147.18	N	
MT PISGAH	WA4COS	144.65	145.25	N	P
N. WILKESBORO	K4ITL	144.77	145.37		
NEW BERN	WD4JMS	146.01	146.61		PA
NEWPORT	K4GRW	144.85	145.45		A
NEWTON	N4AWV	144.83	145.43	N	P
PINE BLUFF	WR4BAR	147.84	147.24	N	
RALEIGH (CITY)	N4BEA	144.89	145.49		A
RALEIGH	WR4ACF	146.04	146.64		
RALEIGH	K4BWC	146.13	146.73		A
RALEIGH	K4ITL	146.28	146.88		
RALEIGH	K4ITL	147.75	147.15		PA
REIDSVILLE	K4YFT	146.25	146.85		
ROANOKE RAPIDS	K4PUV	147.63	147.03		
ROARING GAP	WB4PZA	146.22	146.82		
ROBBINSVILLE	WB4ZQB	146.445	147.045		L
ROCKINGHAM	WA4ULA	146.355	146.955	N	
ROCKY MOUNT	WD4HIG	147.72	147.12		A
SALISBURY	W4EXU	146.13	146.73		
SANFORD	WB4EJJ	147.78	147.18	N	A
SAURATOWN MT	WB4SNA	144.79	145.39	N	CL
SHELBY	KB4AF	146.28	146.88		
SHELBY	KB4AF	147.945	147.345		A
SIMPSONVILLE	WA4PPV	144.79	145.39	N	P
SMITHFIELD	WR4BBO	146.37	146.97		A
SPRING LAKE	WR4BCA	146.115	146.715	N	
STATESVILLE	AI4O	146.085	146.685		PA
SYLVA	KA4V	147.90	147.30	N	
TRINITY	WD4KUN	144.69	145.29	N	P
TUCKASEGEE	W8OMV	147.90	147.30	N	
UNION CROSS	WA4RBW	147.915	147.315		
WADESBORO	W4USH	146.235	146.835	N	
WASHINGTON	WB4GMI	146.205	146.805	N	
WAYNESVILLE	N4SM	147.87	147.27	N	PA
WILLIAMSTON	WA4TKJ	144.81	145.41	N	
WILMINGTON	WR4AVF	146.13	146.73		
WILMINGTON	WR4AHL	146.22	146.82		
WINSTON-SALEM	WA4GIC	146.04	146.64		A

220 MHZ

ASHVL/MT PISGAH	WR4AEV	222.34	223.94		
CHARLOTTE	WR4AEU	222.36	223.96		P
CHERRYVILLE	WB4UDS	223.20	224.80	N	
FAYETTEVILLE	W4EHF	222.42	224.02		
GREENSBORO	KZ4O	223.22	224.82	N	RT

CVRA REPEATER SYMBOLS

Unmarked in First Code column-Full CVRA Members

N	NON Member CVRA	RB	Remote Base System
D	Delinquent Member	T	Tone Access Repeater
M	T-MARC Repeater	L	Linked Repeater
A	Open Autopatch	R	Radioteletype Rptr.
PA	Private Autopatch	V	Television (SS or ATV)
EA	Emerg. Autopatch	P	Proposed Repeater
		C	Under Construction
		O	Off Air Temporarily

MARYLAND REPEATERS

2 METERS

ADELPHI	WB3FRW	144.77	145.37
ANNAPOLIS	W3VRD	144.73	145.33
ASHTON	WR3AFT	146.40	147.00
BALTIMORE	K3SP	146.07	146.67
BALTIMORE	W3DID	147.63	147.03
BALTIMORE	W3BPX	147.885	147.285
BEL AIR	K3GUX	146.175	146.775
BETHESDA	K3YGG	144.69	145.29
CHELTENHAM	WA3OPC	147.75	147.15
CHEVERLY	WR3ABC	146.01	146.61
COLLEGE PARK	W3EAX	144.89	145.49
COLUMBIA	K3CUJ	147.735	147.135
COLUMBIA	WR3AGP	147.99	147.39
CROWNSVILLE	WR3ACL	146.10	146.70
CUMBERLAND	WA3III	144.85	145.45
CUMBERLAND	WR3AGI	146.28	146.88
DAVIDSONVILLE	WR3AJP	147.705	147.105
E. BALTIMORE	WR3AFI	147.84	147.24
EASTON	WA3GVI	146.445	147.045
FREDERICK	WR3ABL	146.13	146.73
FREDERICK	WA3OHI	147.66	147.06
FROSTBURG	K3CCC	147.99	147.39
GAITHERSBURG	WR3AKP	146.355	146.955
GLEN BURNIE	WA3PJQ	146.205	146.805
GREENBELT	W3ZM	146.235	146.835
GREENBELT	W3MZG	146.28	146.88
HAGERSTOWN	W3CWC	146.34	146.94
HAGERSTOWN	K3UMV	147.69	147.09
HAVRE DE GRACE	K3UAV	146.25	146.85
JESSUP	WA3DZD	146.16	146.76
LEXINGTON PARK	WR3ACP	146.04	146.64
LEXINGTON PARK	W3NET	146.265	146.865
N. BALTIMORE	WA3KOK	146.34	146.94
OCEAN CITY	W3HTB	147.78	147.18
POTOMAC	WR3ACF	147.87	147.27
ROCKVILLE	W3RCN	144.65	145.25
ROCKVILLE	WR3ABM	146.04	146.64
SALISBURY	WA3ROW	146.22	146.82
SALISBURY	WA3YII	146.385	146.985
SILVER SPRING	WR3AEO	147.78	147.18
W. BALTIMORE	WR3AGS	147.945	147.345
WASHINGTON DC	WR3AGX	147.96	147.36
WESTMINSTER	K3PZN	144.81	145.41
WHEATON	WR3AFD	147.69	147.09

220 MHZ

DAMASCUS	WR3AHS	222.98	224.58
DAVIDSONVILLE	N3ARN	222.28	223.88
E. BALTIMORE	WR3AFI	222.24	223.84
N. BALTIMORE	N3IC	222.64	224.24
W. BALTIMORE	WA3DZZ	223.20	224.80
W. BALTIMORE	WR3AKN	223.34	224.94
WASHINGTON DC	W3NKF	222.90	224.50
WHEATON	WR3AFD	223.30	224.90

440 MHZ

ANNAPOLIS	W3EAO	444.475	449.475
BALTIMORE	K3SP	444.35	449.35
BALTIMORE	WB3JWV	449.15	444.15
BURTONSVILLE	WA3TKW	448.65	443.65
E. BALTIMORE	W3WCQ	439.25	426.25
E. BALTIMORE	WR3AFI	444.55	449.55
FREDERICK	WA3OHI	443.75	448.75
FREDERICK	WR3ABL	449.80	444.80
GAITHERSBURG	WR3AKP	443.60	448.60
GLEN BURNIE	WA3MEJ	448.70	443.70
HARMANS	W3YYY	443.925	448.925
HAVRE DE GRACE	K3UAV	448.10	443.10
JESSUP	WA3DZD	449.10	444.10
LEXINGTON PARK	WA3UMY	448.05	443.05
ODENTON	WA3GPC	449.50	444.50
SILVER SPRING	WB3ARZ	448.45	443.45
SUITLAND	WB3ARZ	444.40	449.40
UPPER MARLBORO	WB3IUT	448.30	443.30
W. BALTIMORE	WA3DZZ	448.35	443.35
W. BALTIMORE	WA3WLO	448.55	443.55
WASHINGTON DC	WA3KOK	444.975	449.975
WHEATON	WR3AFD	444.30	449.30

10 METERS

PARKTON	K3SP	29.56	29.66

6 METERS

BALTIMORE	WA3MDR	52.03	53.03
WHEATON	WB3DBU	52.25	53.25

DELEWARE REPEATERS

2 METERS

BETHANY BEACH	W3HTB	147.78	147.18
DOVER	K3FPB	146.37	146.97
MILLSBORO	K3JL	147.675	147.075
NEWARK	WR3ACV	146.10	146.70
NEWARK	WB3JTK	146.355	146.955
WILMINGTON	WR3ABA	146.13	146.73
WILMINGTON	WA3QLS	147.825	147.225

220 MHZ

NEWARK	WB3JVX	222.36	223.96
NEWARK	WB3JVX	223.36	224.96
WILMINGTON	WB3DPJ	222.40	224.00
WILMINGTON	AD3M	222.94	224.54

440 MHZ

NEWARK	WB3JVX	448.05	443.05

ALABAMA REPEATERS

2 METERS

ALBERTVILLE	K4WSS	146.16	146.76
ALEXANDER CITY	WA4KIK	146.37	146.97
ANDALUSIA	WR4AFF	146.34	146.94
ASHEVILLE	WR4AQS	147.81	147.21
ATHENS	WR4AKD	146.55	147.15
AUBURN	K4RY	147.84	147.24
BAY MINETTE	K4JIE	146.01	146.61
BIRMINGHAM	K4GTQ	144.55	145.15
BIRMINGHAM	K4QWW	144.75	145.35
BIRMINGHAM	K4IR	144.81	145.41
BIRMINGHAM	WR4ACB	146.16	146.76
BIRMINGHAM	WB4SGI	146.28	146.88
BIRMINGHAM	W4CUE	146.34	146.94
BIRMINGHAM	W4EVO	146.43	147.03
BIRMINGHAM	K4TWJ	146.655	146.055
BIRMINGHAM	N4YZ	146.985	146.385
BIRMINGHAM	KA4EIR	147.285	147.885
BIRMINGHAM	WR4AXA	147.63	147.03
BIRMINGHAM	WR4AZG	147.75	147.15
BIRMINGHAM	WA4MHO	147.93	147.33
BLACK	K4LYY	147.81	147.21
BOAZ	K4CWD	147.66	147.06
BREWTON (EAST)	WR4BAE	146.37	146.97
CHEROKEE-BARTON	K4YVV	146.16	146.76
CLANTON	WR4AYJ	146.19	146.79
CULLMAN	WR4ASY	146.25	146.85
DECATUR	W4ATD	146.13	146.73
DECATUR	W4ATD	146.40	147.00
DEMOPOLIS	WR4AJN	146.04	146.64
DOTHAN	N4AN	146.25	146.85
ENTERPRISE	WD4ROJ	147.84	147.24
EUFAULA	WA4AKA	146.10	146.70
EVERGREEN	WR4ALR	146.31	146.91
FAIRHOPE	WA4NWE	146.10	146.70
FAYETTE	K4ACL	147.63	147.03
FLORALA	WD4DWK	147.66	147.06
FLORENCE	WB4NQH	146.22	146.82
FLORENCE	WA4IEN	146.28	146.88
FLORENCE(UALA)	WB4SRG	146.31	146.91
FORT PAYNE	W4RNX	147.87	147.27
GADSEN	W4DEN	146.22	146.82
GRADY	W4AP	147.78	147.18
GREENVILLE	K4TNS	146.07	146.67
GROVE HILL	WB4THU	147.87	147.27
GULF SHORES	WB4OWS	146.04	146.64
GUNTERSVILLE	K4VQJ	147.165	146.565
HALEYVILLE	K4KQE	146.19	146.79
HAMILTON	WA4RNN	146.37	146.97
HAMILTON	WA4RNN	146.985	146.385
HARTSELLE	WR4BDB	146.805	146.205
HEADLAND	WA4QEO	146.16	146.76
HUNTSVILLE	WR4AIU	144.83	145.43
HUNTSVILLE	K4IQU	146.34	146.94
HUNTSVILLE	K4RSB	147.225	147.825
HUNTSVILLE	WB4LTT	147.78	147.18
HUNTSVILLE	WR4AVG	147.90	147.30
JACKSONVILLE	WD4KTY	147.375	147.975
JASPER	WR4AFP	146.04	146.64
JASPER	WR4ASM	146.10	146.70
JASPER	WB4ACN	146.31	146.91
LANETT	K4DXZ	147.60	147.00
LEXINGTON/ANDSN	WR4AYZ	147.84	147.24
LINCOLN	KA4DQZ	144.89	145.49
MOBILE	W4YXO	146.13	146.73
MOBILE	WR4AHQ	146.22	146.82
MOBILE	WB4BXM	146.34	146.94
MOBILE	WB4DCL	147.66	147.06
MOBILE	WA4HFL	147.90	147.30
MONTGOMERY	W4AP	146.16	146.76
MONTGOMERY	WB6GDM	146.25	146.85
MONTGOMERY	WR4AUT	146.31	146.91
MONTGOMERY	WR4AJH	146.40	147.00
MONTGOMERY	WR4AHZ	147.87	147.27
MT CHEAHA	K4BQP	147.69	147.09
MUSCLE SHOALS	W4JNB	146.01	146.61
MUSCLE SHOALS	WB4NQH	146.715	146.115
MUSCLE SHOALS	WB4DIN	147.945	147.345
OPELIKA	W4ZBA	147.195	147.795
OPELIKA	W4ZBA	147.72	147.12
OPELIKA	WB4KNN	147.90	147.30
OPP	WR4AKM	146.04	146.64
OXFORD	WR4AVM	146.10	146.70
PELL CITY	W4RKS	146.01	146.61
PHENIX CITY	WR4BBB	146.01	146.61
PHENIX CITY	N4BJZ	146.28	146.88
RIVERSIDE	WR4AQS	147.81	147.21
ROANOKE	K4JTW	146.865	146.265
SCOTTSBORO	WR4AUZ	146.31	146.91
SELMA	W4NCK	146.13	146.73
SELMA	WR4AXP	147.96	147.36
STEELE	W4DEN	146.07	146.67
STEVENSON	WA4PKB	147.96	147.36
TALLADEGA	W4GBQ	147.96	147.36
TEXASVILLE	W4ICO	146.19	146.79
THOMASVILLE	WA4GNA	147.60	147.00
TROY	WR4AHH	146.22	146.82
TUSCALOOSA	WR4AEH	146.22	146.82
TUSCALOOSA	W4QAZ	146.37	146.97
TUSCALOOSA	KX4I	147.66	147.06
TUSKEGEE	WR4ASH	146.07	146.67
VERNON	WB4TLC	146.07	146.67
WARRIER	WB4YOX	144.85	145.45
WETUMPKA	W4AP	146.04	146.64
WETUMPKA	WR4AZL	146.455	147.045
WETUMPKA	WA4MTG	147.645	147.045
WETUMPKA	WA4MTG	147.745	147.045
WILSONVILLE	N4YZ	146.985	146.385
WINFIELD	KG4X	146.955	146.355

GEORGIA REPEATERS

2 METERS

ADAIRSVILLE	WB4LRA	146.085	146.685
ALBANY	WR4ADM	146.10	146.70
ALBANY	WR4ANB	146.22	146.82
AMERICUS	WR4AQH	147.87	147.27
ASHBURN	K4QT	147.285	147.885
ATHENS	WA4BKF	146.13	146.73
ATHENS	K4TQU	147.375	147.975
ATLANTA GA TECH	W4AQL	147.66	147.06
ATLANTA	N4CLA	144.69	145.29
ATLANTA	WR4ABE	146.04	146.64
ATLANTA	W4DOC	146.22	146.82
ATLANTA	WR4ABC	146.37	146.97
ATLANTA	WR4AHS	147.855	147.255
AUGUSTA	WR4AGD	146.34	146.94
BALDWIN	WD4NHW	147.78	147.18
BLAIRSVILLE*	WA4EZN	147.69	147.09
BRUNSWICK	K4TVE	146.13	146.73
BUFORD	WR4BBV	147.87	147.27
CARROLTON	W4FWD	146.04	146.64
CEDARTOWN	WR4AZL	147.72	147.12
CLEVELAND	K4FOW	*44.69	145.29
CLOUDLAND	N4AHE	147.225	147.825
COHUTTA-RTTY	WR4AXM	146.46	147.06
COLUMBUS	WD4BDU	144.71	145.31
COLUMBUS	WR4BBB	146.01	146.61
COLUMBUS	W4YYE	146.13	146.73
COLUMBUS	N4BJZ	146.28	146.88
COLUMBUS	WA4HCI	147.21	146.01
COLUMBUS-RTTY	K4ACH	144.77	145.37
CONYERS	WB4JDM	147.81	147.21
COVINGTON	WA4ASI	146.925	146.325
CUMMING	W4BJT	144.81	145.41
CUMMING	WR4AOC	147.75	147.15
DALLAS	WR4AHM	146.25	146.85
DALLAS	KB4EO	147.96	147.36
DUBLIN	WA4HZX	147.96	147.36
FOLKSTON	K4DMK	146.19	146.79
FOREST PARK	K4KQK	144.65	145.25
FORSYTH	WR4AQA	147.315	147.915
GAINSVILLE	WR4AEK	146.07	146.67
GRIFFIN	WB4GWA	144.81	145.41

Md., Del., N.Va. Index Ctsy — Gary Hendricksen, T-MARC
Florida Index Ctsy — Al Friend, Fla. Reptr. Council
Ala. & Ga. Index Ctsy — Dave Nulty, Ga. Reptr. Council

GEORGIA

GRIFFIN	WR4AIV	146.31	146.91
GRIFFIN	WR4AEA	146.43	147.43
HAMILTON	WD4MJV	147.835	147.235
HAPEVILLE	WR4ABN	147.63	146.03
HARTWELL*	KY4T	146.895	146.295
IRWINTON	WB4NFG	147.84	147.24
ISABELLA	W4MM	146.13	146.73
JESUP	WA4EQL	146.07	146.67
JONESBORO	WA4OGE	144.73	145.33
JONESBORO	W5BO	144.85	145.45
KENNESAW	WB4UPC	145.43	144.83
KENNESAW	WD4BMC	146.13	146.73
KENNESAW	WR4AMN	146.28	146.88
KENNESAW	WB4UPC	147.94	147.34
LAGRANGE	WR4AVJ	147.93	147.33
LYONS*	K4HAO	146.22	146.82
MACON	WB4OLL	144.83	145.43
MACON	W4BKM	146.06	146.66
MACON	K4IIA	147.66	147.07
MARIETTA	W4PPT	147.075	147.675
METTER	W4TUM	146.31	146.91
MILLEDGEVILLE	WB4DOJ	146.10	146.70
MOULTRIE	WD4KOW	146.19	146.79
NEWNAN	K4SEX	146.19	146.79
PINE MT VALLEY	WB4ULJ	144.59	145.19
PRESTON	W4TOV	146.385	146.985
QUITMAN	WR4BBH	146.28	146.88
RINGGOLD	WR4ABZ	146.715	146.115
ROME	WR4ADH	146.34	146.94
ROSWELL	WA4BRO	144.87	145.47
SANDY SPRINGS	WB4CPL	144.75	145.35
SANDY SPRINGS		146.40	147.00
SAVANNAH	WD4AFY	144.77	145.37
SAVANNAH	K4NLX	146.10	146.70
SAVANNAH	WR4AVO	147.63	147.03
SAVANNAH*	W4HBB	146.28	146.88
SAVANNAH*	W4HBB	146.37	146.97
SMYRNA	WA4YUR	144.61	145.21
STONE MTN	WR4AED	146.16	146.76
STONE MTN-RTTY	WR4BAG	147.105	147.705
SVR CRK/MT ALTO	K4HNM	147.90	147.30
SWAINSBORO*	K4VYX	146.19	146.79
THOMASTON	K4IMK	147.99	147.39
THOMASVILLE	K4UFM	147.66	147.06
TOCCOA*	KA4DIP	147.93	147.33
VALDOSTA	WA4SMH	146.16	146.76
VALDOSTA	WA4SMH	147.135	147.735
VIENNA	WA4RWS	144.89	145.49
WARNER ROBBINS	WB4BEO	146.25	146.85
WARNER ROBBINS	WR4AZP	147.90	147.30
WAYCROSS	WR4AMK	146.04	146.64
WRIGHTSVILLE	WA4RVB	146.34	146.94
220 MHZ			
ATLANTA	W4LBP	223.22	224.82
KENNESAW	WB4UPC	222.34	223.94
KENNESAW	WB4UPC	223.34	224.94
440 MHZ			
ALBANY	WA4GKI	439.25	427.25
COLUMBUS	WA4QHN	449.20	444.20
WARNER ROBBINS	WD4ASB	444.50	449.50

FLORIDA REPEATERS

2 METERS			
ARCADIA	W4MIN	147.675	147.075
BELLE GLADE	W4MML	144.85	145.45
BELLE GLADE	AI4D	147.60	147.00
BOCA RATON	WB4QFY	146.22	146.82
BRADENTON	W4QHA	144.65	145.25
BRADENTON	WR4NYF	146.01	146.61
BRADENTON	W4TAS	146.22	146.82
BRADENTON	WA4BYV	147.69	147.09
BRANDON	WB4BIM	147.765	147.165
BRANDON	WD4AGM	147.99	147.39
BROOKSVILLE	WR8AKR	146.115	146.715
CALLAHAN	KC4P	146.01	146.61
CANTONMENT	WB4JIM	147.93	147.33
CLERMONT	WR4APH	146.295	146.895
CLERMONT	WR4AYH	147.78	147.18
COCOA BEACH	WR4AFI	146.43	147.03
COCOA	WR4AFI	146.28	146.88
CRESTVIEW	WB4UVI	146.43	147.46
CRESTVIEW	WB4UVI	147.96	147.36
CRYSTAL RIVER	WR4AQX	147.87	147.27
DAYTONA BEACH	WR4ALG	146.235	146.835
DAYTONA BEACH	WR4FKL	146.34	146.94
DAYTONA BEACH	WR4AKH	147.75	147.15
DAYTONA BEACH	WB4HAO	147.84	147.24
DEERFIELD BEACH	WA2UGG	146.105	146.705
DELAND	WR4ARF	147.96	147.36
DISNEY WORLD	WR4AMG	147.90	147.30
ENGLEWOOD	KODGF	146.175	146.775
EUSTIS	WR4ARU	147.855	147.255
FLORAL CITY	W4IIR	146.355	146.955
FT LAUDERDALE	WR4AYC	144.51	145.11
FT LAUDERDALE	N4AIV	144.610	145.210
FT LAUDERDALE	WB4LAH	144.63	145.23
FT LAUDERDALE	WA4TPR	144.73	145.33
FT LAUDERDALE	AC4K	146.04	146.64
FT LAUDERDALE	WA4LZR	146.19	146.79
FT LAUDERDALE	WR4ADU	146.31	146.91
FT LAUDERDALE	WB4HAG	146.355	146.955
FT LAUDERDALE	WR4ATI	146.43	147.03
FT LAUDERDALE	WA4IQJ	147.735	147.135
FT MYERS	WR4AES	146.19	146.79
FT MYERS	WB4TLF	146.28	146.88
FT PIERCE	WR4AHW	146.13	146.73
FT PIERCE	WA4MLD	147.81	147.21
FT WALTON BCH	WR4ABZ	146.19	146.79
FT WALTON BCH	W4MTD	146.28	146.88
FT WALTON BCH	WR4BDM	147.60	147.00
GAINSVILLE	WB4IJR	146.19	146.79
GAINSVILLE	WR4ACE	146.22	146.82
GAINSVILLE	W4DFU	146.31	146.91
GAINSVILLE	KB4HF	147.975	147.375
HALLANDALE	WR4ACC	146.25	146.85
HOLLYWOOD	K2YRZ	146.085	146.685
HOLLYWOOD	WA4WHD	146.10	146.70
HOLLYWOOD	WB4TON	146.385	146.985
HOMESTEAD	W4SVI	146.235	146.835
HOMESTEAD	KB4KW	146.40	147.00
HUDSON	WR4AXW	146.205	146.805
JACKSONVILLE	WR4AMI	146.04	146.64
JACKSONVILLE	WR4AZH	146.13	146.73
JACKSONVILLE	K4YLX	146.16	146.76
JACKSONVILLE	WA4IHY	146.205	146.805
JACKSONVILLE	WR4AKP	146.25	146.85
JACKSONVILLE	K4YLX	146.28	146.88
JACKSONVILLE	K4CP	146.40	147.00
JACKSONVILLE	KA4IUC	147.645	147.045
JACKSONVILLE	WB4NCZ	147.69	147.09
JACKSONVILLE	N4UF	147.795	147.195
JACKSONVILLE	WR4APN	147.825	147.075
JACKSONVILLE	WR4AQT	147.90	147.30
JACKSONVILLE	K4YLX	147.99	147.39
JUNO BEACH	WR4APJ	147.84	147.24
JUPITER	WB4ILH	146.025	146.625
KEY WEST	WR4AOV	146.34	146.94
LAKE CITY	W4VRR	147.75	147.15
LAKE PARK	W4UZJ	147.75	147.15
LAKE PLACID	WR4BBR	147.645	147.045
LAKE WALES	WR4AND	146.93	147.33
LAKELAND	W2HGV	144.69	145.29
LAKELAND	WB4QID	144.83	145.43
LAKELAND	WB4QID	146.085	146.685
LARGO	WR4AKV	146.37	146.97
LIVE OAK	K4BZS	146.34	146.94
MARIANNA	WR4AWY	146.07	146.67
MELBOURNE	WR4AMJ	146.01	146.61
MELBOURNE	WR4AMJ	146.25	146.85
MELBOURNE	WB4ABK	146.385	146.985
MELBOURNE	WR4AEE	147.705	147.105
MIAMI BEACH	W4FQM	147.78	147.18
MIAMI	WB4VMU	144.53	145.13
MIAMI	K4HYE	144.55	145.15
MIAMI	WD4RXD	144.59	145.19
MIAMI	KA4DFX	144.65	145.25
MIAMI	AK4Y	144.67	145.27
MIAMI	WA4ARD	144.71	145.31
MIAMI	KA4LJD	144.75	145.35
MIAMI	KA4HWE	144.79	145.39
MIAMI	WD4NLG	144.81	145.41
MIAMI	K4BMF	144.83	145.43
MIAMI	WR4ASN	144.87	145.47
MIAMI	KA4AQQ	144.89	145.49
MIAMI	WD4NLG	146.13	146.73
MIAMI	WB4MCK	146.16	146.76
MIAMI	WB4INA	146.205	146.805
MIAMI	W4NBL	146.295	146.895
MIAMI	WA4ARD	146.325	145.925
MIAMI	WC4ACO	146.34	146.94
MIAMI	WR4AFN	146.46	147.06
MIAMI	N4AEN	147.615	147.015
MIAMI	WR4AHN	147.69	147.09
MIAMI	WR4AWF	147.75	147.15
MIAMI	AF4S	147.81	147.21
MIAMI	WR4ASA	147.84	147.24
MIAMI	WA4TPW	147.855	147.255
MIAMI	WR4BDC	147.87	147.27
MIAMI	WB4IVM	147.885	147.285
MIAMI	WB4ESB	147.90	147.30
MIAMI	N4XZ	147.93	147.33
MIAMI	WB4DTC	147.945	147.345
MIAMI	WB4DXX	147.975	147.375
MIAMI	WA4LPT	147.99	147.39
MILTON	K4IVD	146.10	146.70
NAPLES	WR4ANO	146.07	146.67
NAPLES	WB4FUS	146.265	146.865
NAPLES	WD4ILS	147.945	147.345
NEW PORT RICHEY	WR4AML	146.025	146.625
NEW PORT RICHEY	WR4AZD	146.07	146.67
NICEVILLE	KA4EPQ	146.13	146.73
OCALA	WR4ALJ	146.01	146.61
OKEECHOBEE	WB4QQK	147.795	147.195
ORANGE PARK	WR4AQZ	146.07	146.67
ORLANDO	WB4TCW	146.04	146.64
ORLANDO	W4OHL	146.10	146.70
ORLANDO	WR4AFO	146.16	146.76
ORLANDO	WR4AEL	146.22	146.82
ORLANDO	WB4UOK	147.63	147.03
ORLANDO	WR4AJR	147.69	147.09
ORLANDO	WR4AJM	147.72	147.12
ORLANDO	WR4AEL	147.825	147.225
ORLANDO	WR4ARO	147.99	147.39
PAHOKEE	K4SJA	144.65	145.25
PALATKA	K4DXL	147.69	147.09
PALATKA	W4EXP	147.93	147.33
PANAMA CITY	WR4ALU	146.10	146.70
PANAMA CITY	K4PMO	146.34	146.94
PANAMA CITY	WB4SHN	147.99	147.39
PENSACOLA	WA4UAJ	144.51	145.11
PENSACOLA	WR4ACZ	146.16	146.76
PENSACOLA	WR4BDF	146.25	146.85
PENSACOLA	WR4AIK	146.34	146.94
PENSACOLA	WA4IZM	147.75	147.15
PERRY	W4RTN	146.37	146.97
PLANT CITY	K4RYR	144.56	145.16
PLANT CITY	WR4ANM	144.87	145.47
PLANTATION	W2GDG	144.70	145.37
POMPANO BEACH	WB4UFA	146.01	146.61
ROCKLEDGE	WD4NQK	147.735	147.135
RUSKIN	WB4YRW	147.705	147.105
SAN ANTONIO	WR4APL	146.28	146.88
SAN MATEO	W4QCP	147.66	147.06
SANFORD	WR4AJC	146.13	146.73
SARASOTA	WR4AUP	144.53	145.13
SARASOTA	WR4AUP	146.13	146.73
SEBRING	WR4BAJ	147.87	147.27
SEMINOLE	K4GGX	147.135	146.70
SINGER IS	WD4LGT	144.57	145.17
SINGER IS	N4BBZ	147.765	147.165
ST CLOUD	W4SIE	146.19	146.79
ST PETERSBURG	WA4CZW	144.85	145.45
ST PETERSBURG	WB4COT	146.31	146.91
ST PETERSBURG	K4KE	147.60	147.00
ST PETERSBURG	K4SCL	147.66	147.06
ST PETERSBURG	WA4FYR	147.885	147.285
ST PETERSBURG	WR4AUF	147.915	147.315
ST PETERSBURG	W4APV	147.96	147.36
STUART	K4FI	146.46	147.06
SUNRISE	WD4NXL	144.69	145.29
TALLAHASSEE	WR4AAB	146.055	146.655
TALLAHASSEE	WD4HWE	146.31	146.91
TALLAHASSEE	K4MZA	147.63	147.03
TAMPA	W4EFK	144.89	145.49
TAMPA	KR4X	146.16	146.76
TAMPA	WA4KLW	146.19	146.79
TAMPA	W4TTW	146.235	146.835
TAMPA	WB4AKA	146.265	146.865
TAMPA	WR4AXR	147.63	147.03
TAMPA	W4VDE	147.75	147.15
TAMPA	K4SDV	147.81	147.21
TAMPA	KO4J	147.84	147.24
TAMPA	WA4VOT	147.945	147.345
TAMPA	W4NGH	147.975	147.375
TICE	K4VGN	146.115	146.715
TITUSVILLE	WB4IFH	146.07	146.67
TITUSVILLE	W4NOV	146.31	146.91
TITUSVILLE	K4DII	146.37	146.97
VERO BEACH	W4OT	146.04	146.64
W PALM BEACH	WA4ARE	146.07	146.67
W PALM BEACH	WR4AIS	146.10	146.70
W PALM BEACH	KA4EPS	146.145	146.745
W PALM BEACH	WR4AFM	146.28	146.88
W PALM BEACH	WR4AIT	146.37	146.97
W PALM BEACH	WD4GBD	147.885	147.285
W PALM BEACH	WD4NWI	147.915	147.315
W PALM BEACH	WA4HXZ	147.96	147.36
WINTER HAVEN	WR4AUY	146.055	146.655
6 METERS			
EUSTIS	N4AQL	52.05	53.05
FT LAUDERDALE	WR4ATI	52.73	53.73
GAINSVILLE	WB4FSQ	52.01	53.10
JACKSONVILLE	WR4ATE	52.03	53.03
JACKSONVILLE	WR4APO	52.76	52.64
LARGO	WA4GCH	52.55	53.55
MIAMI	WR4ARA	52.17	53.17
MIAMI	AC4K	52.48	52.68
MIAMI	WR4ASN	52.65	53.65
NEW PORT RICHEY	WR4AML	52.07	53.07
PENSACOLA	WR4BDF	52.05	53.05
PLANT CITY	WR4ANM	52.13	53.13
SHELL POINT	WA4ISJ	52.67	53.67
TAMPA	W4VDE	52.63	53.63

VIRGINIA

COLE MTN	WR4BCI	147.93	147.33	N	
COVINGTON	WB4CAV	146.22	146.82	N	
CULPEPPER	WR4BCS	147.72	147.12	M	
DANVILLE	WR4BDN	146.10	146.70		
DANVILLE	WR4AHG	147.95	147.35	N	
DANVILLE(DCC)	WB4GJG	146.325	146.925		
ELLIS KNOB	W4WRN	147.645	147.045	N	
FAIRFAX	W4LBL	146.19	146.79		PA
FAIRFAX	K4VYN	146.31	146.91		PA
FALLS CHURCH	W4AQD	144.75	145.35	M	
FARMVILLE	WB4NWP	146.31	146.91		
FINCASTLE	W4WIC	146.04	146.64	N	
FOREST	WR4ADY	146.16	146.76		EA
FRANKLIN	K4SPS	147.90	147.30	N	PA
FREDRICKSBURG	WB4LNT	147.615	147.015	N	
FRONT ROYAL	WB4NER	144.75	145.35	M	P
GALAX	WR4AHR	144.53	145.13	N	
GALAX	WA4ZIV	144.83	145.43	N	
GATE CITY	WD4GTA	147.945	147.345	N	
GRUNDY	K4HWQ	147.90	147.30	N	A
GUM SPRING	KB4GX	147.87	147.27		
HAMPTON	WR4ALW	146.13	146.73		
HAMPTON	WR4AFT	146.34	146.94	N	T
HARRISONBURG	WA4ZBP	146.25	146.85	N	C
HAZEL MT	WD4CYZ	146.235	146.835	N	
HIGH KNOB	K4AXO	147.81	147.21	N	
JOHNSONS MT	WB4JBJ	147.705	147.105		LR
JONESVILLE	WA4OVC	146.31	146.91		
KLMNRK/SALUDA	WA4UAF	147.93	147.33		
LEXINGTON	WA4WBD	146.07	146.67		
LYNCHBURG	WR4AXO	146.01	146.61	N	
LYNCHBURG	WD4EXH	147.84	147.24	N	L
LYNCHBURG	W4OSH	147.975	147.375	N	
MANASSAS	WD4JCE	144.67	145.27	M	R
MANASSAS	WB4HHN	146.37	146.97		PA
MARION	N4BIW	146.04	146.64		
MARTINSVILLE	AB4L	147.885	147.285	N	
MCLEAN	WD4IWG	147.81	147.21	M	R
NEW MARKET	WR4ATG	146.025	146.625	M	
NORFOLK	WB4LJM	146.10	146.70		
PETERSBURG	K4SII	147.78	147.18	N	
PETERSBURG	WR4BBU	147.84	147.24	N	
PETERSBURG	WR4AWC	147.99	147.39	N	
PORTSMOUTH	K4LMY	146.25	146.85	N	
RICHMOND	WB4QEY	146.04	146.64		
RICHMOND	WR4ACW	146.28	146.88	N	PA
RICHMOND	W4ZA	146.34	146.94		T
RICHMOND	WA4DMO	147.66	147.06	N	
RIPPLEMEADE	K4TUE	146.31	146.91		
ROANOKE	WR4AHT	146.34	146.94	N	AO
ROANOKE/POOR MT	W4CA	146.385	146.985		L
SALEM	WR4AFE	146.28	146.88	N	
SHENANDOAH	K4SAD	147.855	147.255	N	P
SOUTH BOSTON	WR4AYU	146.46	147.06		
STAUNTON	WA4ZBP	146.25	146.85		
STERLING	WA4TXE	146.115	146.715	M	
SUFFOLK	WR4AKS	146.40	147.00	N	PA
TAZEWELL	WD4DZE	147.75	147.15	N	
VIRGINIA BEACH	WB2YVN	146.01	146.61	N	C
VIRGINIA BEACH	WA4KXV	146.37	146.97		EA
VIRGINIA BEACH	WA4SBC	147.645	147.045	N	
WARRENTON	WB4FJT	147.765	147.165	M	
WAYNESBORO	W4BLD	147.63	147.03		PA
WILLIAMSBURG	W4NTG	146.07	146.67	N	
WINCHESTER	W4RKC	146.22	146.82		EA
WOODBRIDGE	WB4FQR	147.84	147.24	M	A
WYTHEVILLE	WA4PDL	146.175	146.775	N	

10 METERS

CHARLOTTESVILLE	K4RKA	29.60	29.60	N	RBC

220 MHZ

ALEXANDRIA	WA4CCF	223.22	224.82	M	
FAIRFAX	K4GCM	222.34	223.94		
FALLS CHURCH	N4CHP	222.22	223.82	M	
GALAX	WA4DFH	222.74	224.34	N	P
LYNCHBURG	WB4DBB	223.34	224.94		C
PORTSMOUTH	K4CRK	223.02	224.62	N	C
SUFFOLK	WA4JUO	222.34	223.94	N	C

440 MHZ

ALEXANDRIA	WR4AAG	439.25	426.27	M	V
ALEXANDRIA	W4HFH	449.60	444.60	M	
ANNANDALE	WR4AQG	444.85	449.85	M	PL
ARLINGTON	K8ZOA	449.00	444.00	M	L
CHARLOTTESVILLE	WR4ATL	449.25	444.25		
COLE MTN	WR4BCI	449.15	444.15	N	P
COVINGTON	WB4CAV	447.25	442.25	N	
FAIRFAX	K4JYF	444.75	449.75		
FALLS CHURCH	WB8CRK	449.45	444.45	M	L
LYNCHBURG	WB4DBB	449.35	444.35		L
LYNCHBURG	K4HEX	449.50	444.50	N	
MANASSAS	WD4JCE	444.225	449.225	M	L
PETERSBURG	WR4BBU	449.50	444.50	N	
PETERSBURG	WR4BBZ	449.85	444.85	N	
PORTSMOUTH	K4MLY	449.25	444.25	N	
ROANOKE	WR4AFE	447.75	442.75	N	
ROANOKE/POORE MT	W4CA	442.50	447.50		L
SOUTH BOSTON	WB4YWH	447.25	442.25	N	C
STAUNTON	W4WRW	449.95	444.95	N	C
TAZEWELL	WD4DZE	448.90	443.90	N	P
TYSONS CORNER	WB6GUS	448.50	443.50	M	
VIRGINIA BEACH	WA4KXV	449.95	444.95		
WAYNESBORO	W4BLD	449.05	444.05		
WAYNESBORO	W4BLD	449.30	444.30		PA
WOODBRIDGE	WB4FQR	444.90	449.90	M	

SIX METERS

ABINGTON	WR4ATJ	52.01	53.01	M	L
ALEXANDRIA	WA4CCF	52.13	53.13	M	P
CHARLOTTESVILLE	WR4ATZ	52.525	52.525	N	RBC
DANVILLE(DCC)	WB4GJG	52.13	53.13		
FAIRFAX	KA4DCS	52.58	52.48	M	
LEXINGTON	WR4BCI	52.01	53.01	N	
LYNCHBURG	WB4DBB	52.15	53.15		
NORFOLK	WR4ATK	53.525	52.525	N	
SOUTH BOSTON	WB4YWH	52.07	53.07	N	C

WEST VIRGINIA REPEATERS

TWO METERS

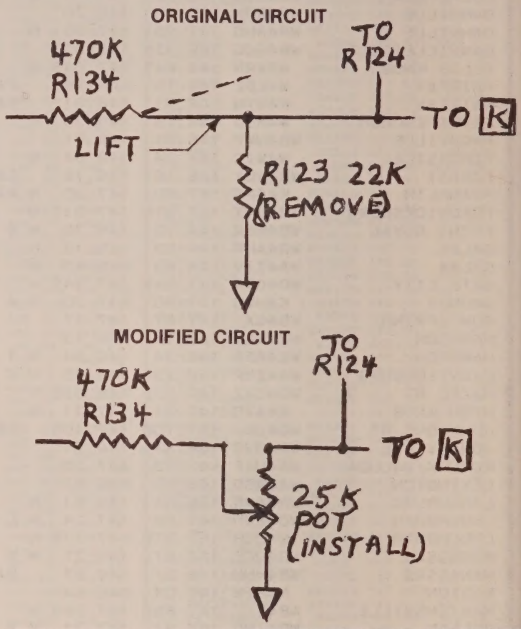
ALDERSON	WR8AKZ	146.13	146.73	N	
BECKLEY	N8BZS	144.77	145.37	N	
BECKLEY	K8BO	146.34	146.94		
BKLY/FLAT TOP MT	K8BO	146.25	146.85		A
BLUEFIELD	W8MOP	144.89	145.49		A
BLUEFIELD	WD8OGY	146.415	147.015		PA
BRIDGEPORT	WR8ALC	147.705	147.105	N	EA
BRIDGEPORT	K8VNQ	147.72	147.12		EAL
BUCKHANNON	WD8LWI	145.93	147.93	N	
BUCKHANNON	K8WYH	146.25	147.85	N	
CHARLESTON	WR8AER	146.22	146.82	N	
CHARLESTON	WB8CQV	146.28	146.88	N	
CLARKSBURG	WB8ZVS	146.22	146.82		A
COAL MTN	WB8KAD	146.12	146.72	N	A
COTTAGEVILLE	WR8AKV	146.31	146.91	N	
DUNBAR	K8VKI	147.72	147.12		
EAST RIVER MTN*	WR4AXS	146.16	146.76	N	
ELKINS	WR8AOH	146.04	146.64	N	

CTS MODIFICATION FOR HEATHKIT HANDHELDS

—by Larry B. David, W4YEJ

Heathkit 2036, 2036A and VF7401 handheld owners who need to adjust the level of the PL or CTS tones might consider the replacement of one fixed resister with a mini-potentiometer, making possible adjustments from zero to the original maximum which is usually about 7 db too high for most repeater tone decoders.

If necessary, bend the leads on the pot to fit the mounting holes where R123 has been removed or add short wire leads to the pot so that a mechanically secure mounting results. The part numbers shown are from the VF7401. They MAY agree with earlier Heathkit models.



WEST VIRGINIA

FAIRMONT	W8JM	146.31	146.91		
FRANKLIN	W3RUA	147.945	147.345		
GRAFTON	K8VNQ	147.975	147.375		L
HUNTINGTON	WB8EZR	146.04	146.64	N	
HUNTINGTON	WR8AGH	146.16	146.76	N	
HUNTINGTON	KA8BKX	147.90	147.30	N	
KINGSTON/LICK KB	W8FG	144.87	145.47		
LEON	WB8NMT	147.78	147.18	N	
LOGAN	WR8ADD	146.37	146.97	N	
MARTINSBURG	WB8VUZ	147.855	147.255	N	
MCMECHEN	W8WUX	146.31	146.91	N	
MORGANTOWN	K8LG	144.83	145.43		
MORGANTOWN	WB8YZT	146.085	147.955	N	
MORGANTOWN	W8CUL	146.16	146.76		
MULLENS	WR8AKX	147.63	147.03	N	
NEW MARTINSVLLE	WR8ABY	146.34	146.94	N	
OAK HILL	KA8EMX	146.19	146.79		A
PARKERSBURG	WR8ACJ	146.37	146.97	N	PA
PARKERSBURG	WR8ACJ	147.96	147.36	N	
PARSONS	K8VNQ	144.73	145.33		L
PARSONS	K8VNQ	145.93	145.33		
PENNSBORO	WA8CND	147.90	147.30	N	
PRINCETON	WB8NRK	146.46	147.06		A
RAVENSWOOD	WA8USO	146.07	146.67		
RICHWOOD	K8VKB	146.34	146.94		
SCOTT DEPOT	K8SLI	147.87	147.27	N	
SPENCER	WB2HVN	146.01	146.61	N	
ST ALBANS	WB8GDY	146.40	147.00		
TERRA ALTA	WB8PHU	147.60	147.00		
WEIRTON	WR8AQA	146.34	146.94		
WELCH	WB8SXZ	144.85	145.45		
WHEELING	W8YFX	144.59	145.19	N	
WHEELING	W8JDH	146.16	146.76	N	

220 MHZ

HUNTINGTON	KA8BKX	222.54	224.14	N

CVRA-SOUTHEASTERN REPEATER ASSOCIATION · MEMBER ·

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FOR CHANGES IN THE CVRA REPEATER INDEX-CONTACT YOUR STATE DIRECTOR OR JOURNAL EDITOR

REPRESENTING UHF-VHF INTERESTS THROUGHOUT VIRGINIA NORTH CAROLINA, SOUTH CAROLINA, TENNESSEE & WEST VIRGINIA

GUILFORD COUNTY ARES PROVIDES COMMUNICATIONS FOR TRIALS

—by Jeanne McNairy N4EEN

On Saturday and Sunday, April 4th and 5th, at the Southern Life Farm, Greensboro, N.C., the Guilford County Amateur Emergency Radio Service provided communications for the United States Equestrian Team Screening Trials hosted by the Sedgefield Hunt Horse Trials. This pre-olympic event was coordinated by Judy Carter and Jane Fulton. Guilford County Emergency Coordinator, Glenn Crouse, WD4JLC, organized 24 amateur radio operators into a communications network for the Screening Trials.

The Amateurs used two meter gear on a simplex frequency of 146.52. Amateurs relayed scores, passed traffic and reported injuries to the control net at the central PA system center so that the information could be put on the loudspeaker. Amateurs were stationed at the start and finish lines, the scorers hut and at each of the 17 jumps throughout the two mile course.

Only two injuries were reported, both to horses. The mud was bad Sunday due to the rain and horses did a lot of slipping and sliding.

FLORIDA

10 METERS

TAMPA	WD4MRW	29.54	29.64

220 MHZ

CLEARWATER	WR4AVI	223.34	224.94
CLEARWATER	W4DPH	223.38	224.98
CRESTVIEW	WB4CDR	223.22	224.82
ELGIN AFB	WD4JEJ	222.34	223.94
FT LAUDERDALE	WB4QKZ	222.62	224.22
FT LAUDERDALE	WR4ATI	223.30	224.90
JACKSONVILLE	WR4AQT	222.90	224.50
JACKSONVILLE	WA4KKY	223.34	224.94
KATHLEEN	N4ADN	223.02	224.62
KEY LARGO	WD4NEZ	222.94	224.54
LAKELAND	KF4Y	222.38	223.98
LAKELAND	W4NY	223.10	224.70
LARGO	WA4GCH	222.34	223.94
LARGO	K4SCL	223.06	224.66
MIAMI	WR4ASN	222.34	223.94
MIAMI	WD4GZL	222.38	223.98
MIAMI	WB4INA	222.90	224.50
MIAMI	KA4HWE	223.18	224.78
MIAMI	WR4BCB	223.22	224.82
MIAMI	WR4BDH	223.26	224.86
MIAMI	WR4AKZ	223.34	224.94
MIAMI	WB4VMU	223.38	224.98
MILTON	K4IVD	223.10	224.70
NORTH MIAMI	AI4I	223.14	224.74
ORLANDO	WB4NK	223.22	224.82
ORLANDO	WB4NK	223.34	224.94
PENSACLOA	WA4KST	223.34	224.94
ST PETERSBURG	WR4AWX	223.26	224.86
ST PETERSBURG	W4APV	223.30	224.90
TAMPA	KD4J	222.62	224.22
TAMPA	W4WWW	223.14	224.74
TAMPA	WD4MCR	223.18	224.78
VALRICO	AA4WJ	222.94	224.54

440 MHZ

BOCA RATON	WD4OYT	444.60	449.60
BOCA RATON	WB4QFY	449.30	444.30
BRADENTON	WR4AWL	448.25	443.25
ELGIN AFB	WD4JEJ	444.10	449.10
ELLENTON	K4DYB	449.30	333.30
FT LAUDERDALE	WR4AYC	439.25	427.25
FT LAUDERDALE	WD4FAM	442.45	447.45
FT LAUDERDALE	WB4HAG	444.10	449.10
FT LAUDERDALE	WR4ATI	447.10	442.10
FT LAUDERDALE	WR4AYC	447.20	442.20
FT LAUDERDALE	WA4IQJ	447.50	442.50
FT LAUDERDALE	WA4IPU	447.60	442.60
FT LAUDERDALE	WB4IRG	447.70	442.70
FT LAUDERDALE	WA4ZLR	448.00	443.00
FT LAUDERDALE	K4HIR	448.30	443.30
FT LAUDERDALE	WR4AYC	448.85	443.85
JACKSONVILLE	WR4AJP	444.50	449.50
JACKSONVILLE	WR4AMR	447.10	442.10
JACKSONVILLE	WR4AAF	449.00	444.00
MARGATE	WB4RZS	449.70	444.70
MELBOURNE	WR4AEE	439.25	425.25
MELBOURNE	WR4AEG	443.80	448.80
MIAMI	WR4BDH	443.80	448.80
MIAMI	K4LIX	444.15	449.15
MIAMI	WB4INA	444.55	449.55
MIAMI	WD4NLG	447.15	442.15
MIAMI	WB4TTZ	447.30	442.30
MIAMI	WB4ZHP	447.40	442.40
MIAMI	WR4ARA	448.40	443.40
MIAMI	KA4BIV	448.50	443.50
MIAMI	WD4MTW	448.60	443.60
MIAMI	WR4BCB	448.75	443.75
MIAMI	WR4BDH	448.90	443.90
MIAMI	WB4ESB	449.00	444.00
MIAMI	WB4VMU	449.20	444.20
MIAMI	WD4EIH	449.80	444.80
NEW PORT RICHEY	WR4AML	448.00	443.00
ORLANDO	WA4FNJ	444.10	449.10
ORLANDO	WR4AXZ	444.50	449.50
ORLANDO	WB9CRH	444.975	449.975
PALATKA	WB4EQT	448.00	443.00
PLANT CITY	WR4ANM	449.00	444.00
POMPANO BEACH	WB4QKZ	447.25	442.25
RIVERVIEW	WB4BIM	449.80	444.80
ROCKLEDGE	WR4AFI	444.25	449.25
SARASOTA	WD4BAJ	448.90	443.90
SARASOTA	WR4AUP	449.70	444.70
ST PETERSBURG	WA4IBM	444.20	449.20
TAMPA	WB4COT	443.80	448.40
TAMPA	WR4AXR	444.40	449.40
TAMPA	W4ATY	444.90	449.90
TAMPA	W4EFK	449.60	444.60
W PALM BEACH	WR4AIT	444.50	449.50
W PALM BEACH	WR4AIT	444.75	449.75

CVRA NET REGISTER (Local Times Indicated)

TWO METERS

ANDERSON SC	37/97	WR4AIO	ANDERSON RADIO CLUB NET	DAILY	2130
ASHEVILLE NC	16/76	WA4BVW	YL NET	THU	2030
ASHEVILLE NC	16/76	WA4BVW	WESTERN NORTH CAROLINA TFC NET	TUE	2030
BECKLEY WV	25/85	WR8AKZ	BLACK DIAMOND ARC NET	MON	2100
BENSON NC	87/27	WR4ARL	JOHNSON ARS NET	DAILY	1930
BLUEFIELD VA	4.89/5.49	WD4RPT	TWIN STATE EMERG. NET	TU-TH	1900
BURLINGTON NC	07/67	WR4AKY	ALAMANCE COUNTY ARES NET	MF	2100
CATAWBA COUNTY NC	82/82		CATAWBA COUNTY RACES NET	MON	1900
CHARLOTTE NC	34/94	WR4AEU	METROLINA 2-METER EMERG. NET	DAILY	2100
CHERAW SC	735/135	WD4HEH	CHESTERFIELD COUNTY ARS NET	TUE	2030
COLUMBIA SC	34/94	K4ICL	COLUMBIA ARC NET	THUR	2100
DANVILLE VA	10/70	WR4BDN	LAST CAPITOL SERVICE NET	TTHSN	2030
DILLON SC	52/52		DILLON CO. ARC NET	MON	1830
DORCHESTER SC	78/18	W4NAT	DORCHESTER AREC/RACES NET	1ST M	
DUBLIN VA	78/18	WB4UQZ	NEW RIVER VALLEY ARC NET	SUN	2100
DURHAM NC	34/94	WR4BEK	TRIANGLE RADIO ALERT NET	DAILY	2030
DURHAM NC	34/94	WR4BEK	POSSUM TROT NET	MF	0630
FAYETTEVILLE NC	31/91	WR4ANN	POSSUM TROT NET	MF	0630
FAYETTEVILLE NC	31/91	WR4ANN	CAPE FEAR ARS NET	DAILY	1900
FLORENCE SC	37/97	WR4AGM	FLORENCE 2-METER NET	MON	2000
FOREST VA	705/105	WB4JBJ	VA. TELETYPE SOC. RTTY NET	MON	2000
GREENSBORO NC	16/76	WR4AOD	CVRA NEWS NET	WED	2030
GREENSBORO NC	63/03	WD4IPZ	GARS TUE 2100, ARES THU 2100,	CODE DY	2030
GREENVILLE NC	52/52		BRIGHTLEAF ARS NET	TUE	2100
GREENVILLE SC	01/61	WR4ADG	BLUE RIDGE ARPSC NET	TUE	2100
GREENWOOD SC	765/165	WR4AUE	ABBEVILLE-GREENWOOD EMERG. NET	TUE	2200
GRIFTON NC	16/76	WR4ABP	ENC EMERGENCY NET	THU	2100
HIGH POINT NC	72/12	WA4ZXA	HIGH POINT ARC-ARES NET	THU	2000
JOHNSON CITY TN	19/79	WB4IKB	WASHINGTON CITY ARES NET	MON	2100
KILMAR/SALUDA VA	93/33	WA4UAF	RAPPAHANOCK ARA CLUB NET	4TH TUE	2100
JACKSONVILLE NC	40/00	WD4FVO	ONSLOW ARC NET	WED	2100
KNOXVILLE TN	90/30	W4BBB	MIDEASTERN TENN EMERG. NET	M-F	2100
LAFOLLETTE TN	07/67	W4TZG	CAMPBELL CO 2-MTR EMERG. NET	TTHSN	1900
LANCASTER SC	10/70	WC4AAW	LANCASTER CO. NET	SUTTH	2030
LAURENS SC	25/85	WA4UZA	LAURENS COUNTY ARES NET	SUN	2030
LAURINBURG NC	025/625	WR4AOX	SAND HILLS EMERGENCY NET	DAILY	1930
LEXINGTON SC	7235/6835	WR4AGK	LEXINGTON CO RACES NET	WED	2100
LUMBERTON NC	96/36	WR4BDQ	LUMBERTON ARC NET	MF	2030
LYNCHBURG VA	01/61	WR4AXO	LYNCHBURG TWO METER FM NET	TUE	1900
MANTEO NC	34/94	W4PCN	FESSENDEN ARC NET	WED	2000
MARTINSVILLE VA	885/285	AB4L	PATRICK-HENRY EMERG. NET	SUN	2030
MORGANTON NC	75/15	WR4AQI	W. PIEDMONT VHF NET	WED	2100
MYRTLE BEACH SC	01/61	WA4KGN	GRAND STRAND 2-METER NET	WED	2100
NEW BERN NC	01/61	WB4JMS	NEW BERN ARC NET	TUES	2000
NEWBERRY CTY SC	52/52	KB4CO	NEWBERRY COUNTY ARS NET	WED	2100
N. WILKESBORO NC	22/82	WB4PZA	FOOTHILLS RACES NET	MON	2100
N. AUGUSTA SC	13/73	WR4ABB	STATELINE NET	LAST SUN	2000
OAK HILL WV	19/79	WD8OQJ	PLATEAU ARA NET	FRI	2000
OAK RIDGE TN	22/82	WB4OAH	EAST TENN HOSP NET	TUE	2000
OAK RIDGE TN	28/88	W4SKH	ANDERSON COUNTY ARES NET	MON	1900
ORANGEBURG SC	69/09	WR4AQY	VHF NET	TUE	1900
RALEIGH NC	04/64	WR4ACF	RARS NET	DAILY	2000
RALEIGH NC	28/88	WR4AOE	PIEDMONT COASTAL TFC NET	DAILY	2100
REIDSVILLE NC	25/85	K4YFT	ROCKINGHAM CTY. ARC NET	TUE	2100
ROANE CTY TN	72/12	K4EAJ	ROANE COUNTY ARES NET	THU	2000
ROANOKE VA	385/985	WR4AFY	ROANOKE VALLEY ARC NET	WED	2000
SALISBURY NC	13/73	WR4AAA	CENT. NORTH CAROLINA TFC. NET	DAILY	2200
SANFORD NC	78/18	WB4EJJ	CENTRAL CARO. ARES NET	TUE	2130
SUMTER SC	04/64	WR4AOI	SUMTER RPTR. ASSN 2-METER NET	MON	2130
SUMTER SC	615/015	WD4ECQ	SARA-2 METER NET	MON	2100
TAZEWELL VA	75/15	WA4QKH	TRI-COUNTY 2-METER NET	SUN	2000
TIDEWATER AREA VA	37/97	WA4KXV	STARES NET (S. TIDEWATER ARES)	M-F	2100
WHITE HALL SC	31/91	WR4AQL	COASTAL ARA 2-METER NET	THU	2100
WINCHESTER VA	22/82	WR4AGT	SHENANDOAH VALLEY SERVICE NET	DAILY	1915
WINSTON-SALEM NC	04/64	WA4GIC	FORSYTH COUNTY AREC/RACES NET	WED	2100
APPOMATTOX VA	144.25		VIRGINIA SSB NET	THU	2100
GREENSBORO NC	144.25		NORTH CAROLINA S.W.O.T.	TUE	2100
GREENVILLE SC	144.25		SOUTH CAROLINA S.L.O.T.	MON	2100

SIX METERS

CHARLOTTE NC	50.40		CHARLOTTE HORNET NET (AM)	SUN	2100
CLEMSON SC	50.125		DIXIE NET (SSB)	W,SN	2100
RICHMOND VA	50.25		CENTRAL VIRGINIA NET (AM)	DAILY	1900

220 MHZ

ASHEVILLE NC	2.34/4.94	WA4BVW	PISGAH 220 NET	SUN	2100
EASLEY SC	2.46/4.06	W4FHJ	ALTAMONT ARC 220 NET	MON	2030
HILLSBOROUGH NC	2.34/3.94	WA4WTX	PIEDMONT 220 NET	TTH	2100

440 MHZ

RALEIGH NC	432.09		THE EAST COAST 70 CM NET	WED	2100

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A COMEDY OF ERRORS *(But don't blame Shakespeare, or any of those cats for this one .)*

—by John Broadway K4VUW

Late one Saturday night the 19-79 repeater at Level Cross (N.C.) failed to respond to even the most tearful efforts to bring it up. The repeater just can't be down, because for over six months it has not failed once, although it has been in round-the-clock service all that time. Climbing 1750 feet at night in the cold weather to fix the dumb thing was out of the question, so all that could be done was to be sure the breaker had not tripped on the ground . . . it hadn't.

About noon Sunday three hardy souls decided to brave the weather, and got into their cars and started. Lee (W4RPC), Lee (WA4JLT), and John (K4VUW) were hardly on their way before WA4JLT couldn't resist the temptation to try it again, and wouldn't you know, it worked perfectly. Well, we were already on the way, so we decided to go check it anyway, since something had obviously caused it to fail.

So up a couple of us went, complete with new tubes, dummy load, tools, and a lot of ETC. First thing was to check the power. It was a little low . . . about 20 watts . . . but a little touch-up tuning brought it up to where it should be.

But what caused it to fail?? We came up with two good guesses. The timer could have stayed off after some-one timed the repeater out, or a tube could have quit-being loose in the socket, or whatever. We "exercised" the controls on the timer. That's technical talk to state that we rocked the controls back and forth to get rid of any minor dirty spots where the slider on the pot had been sitting.

Then we changed the drivers and the final tubes. This is a little touchy, considering the location of the repeater in the corner of the tower, but Lee, WA4-JLT, is in training to be a Yoga (or whatever those people are that lie on nails, and such). At least I think he is training to be one, since lying across those pieces of angle iron on his back didn't seem to bother him too much. Anyway we had a piece of rope tied around him so he wouldn't fall off the tower. Also, the exercise of climbing up the ladder for ten feet, crawling around it and climbing back down the other side every time he needed something was good for me.

This trip is necessary due to the position of the duplexer and the repeater on the almost lack of a platform at that level. Anyway, it doesn't take too long to change them, even with the inconvenience there.

One minor problem, when we finished . . . no power out at all. We looked and tuned with almost desperation, to no avail, still no output. Nothing to do but go back to the old tubes, since it was getting a little late by that time. One final tweak, maybe we can find something. We did, but what we found was that the antenna coupling shaft was not built for a tweak of that magnitude. It broke.

Fortunately, we found that we could still tune it with pliers, and get it in approximately the correct setting. So back on his back on the angle iron, went Lee, up the ladder, around the ladder, and back down the ladder went I, and we changed the tubes, one at a time to determine the bad one. But with all three of them changed, still no power.

A lot of people have had the flu this winter, but even without the flu, we were undoubtedly sicker than any of them, at this point. But a sudden thought. The dummy load was working perfectly when we started, but could it have failed? So carrying the dummy load, I did the ladder bit again, and went to elevator, where the ohmmeter had been stashed.

We found that the N-type connector on a coax had done it to us. No big problem since, we could repair it, or maybe just use two pieces of wire if necessary. But we didn't have any wire, and the connector had been put together so tight that we could not get it apart, even by jamming it in the collapsing door of the elevator and using pliers. We tried the VOM as a tuning aid, but the terrific RF field that we were in prevented that.

Lee remembered that he had started building a meter panel in the repeater cabinet, but had not had time to finish it before the repeater was put on the tower. Almost without any hope at all, we checked that panel, and the power-out position was one of the few that actually indicated . . . not correctly, but indicated. We did the best we could with that, and it worked a little. Later we found that we had an output of eight watts. But it is surprising how well eight watts does at that height.

Anything was sweet music to them, so we packed up all that we hadn't needed (which was about everything we had brought up, since we found that we hadn't brought anything that we needed), and happily started down. Everything was packed away in our cars, or where-ever it was supposed to be and we were almost on our way, when some poor soul asked if I has plugged in the ID'er. After an appropriate answer, I asked if he had. Same appropriate answer.

At this point, I'll state that I think I have as much intestional fortitude as the next cat, but I don't think I would have had the backbone to roll on the elevator floor in laughter at the two dumb bunnies who hadn't checked the ID'er before they came off the tower. Even though it takes forty-five minutes to ride up and back to get to the repeater, the one dumb bunny who had ridden back up the elevator with the laughing-type person, exhibited marvelous restraint and didn't, by accident of course, inadvertently help the laughing-type person out the elevator door, sometime during the trip.

FINANCIAL REPORT FOR YEAR ENDING DECEMBER 31, 1980

INCOME	TOTAL 1979	TOTAL 1980	NET CHANGE
Advertising	$ 2,985.95	$ 3,119.75	$ 134.00
Associate Membership	6,885.75	7,073.05	187.30
Full Membership	1,102.00	1,066.00	(36.00)
Miscellaneous		79.25	79.25
	$10,953.50	$11,338.05	$ 364.55
EXPENSES			
Journal Mailing	958.79	1,410.66	451.87
Journal Printing	6,767.09	8,087.13	1,320.04
Officer/Director	290.99	569.22	278.33
Postage	393.93	328.17	(65.76)
Miscellaneous Printing	877.04	691.72	(185.32)
Miscellaneous Expense	1,019.32	263.18	(756.14)
McLaurin/Bartlett		336.71	
Outstanding Expenses			
	$10,307.16	$11,686.79	$1,042.92

Beginning Balance Jan. 1, 1980	$ 2,482.53
Outstanding Expense Funds from 1979	300.00
Total Income for 1980	11,338.05
	14,120.58
Total Expenses paid for 1980	11,686.79
Total Cash on Hand Dec. 31, 1980	$ 2,433.79

Carl E. Smith, N4AA Treasurer

COLUMBIA ARC OFFICERS

New officers were elected recently for the Columbia (S.C.) ARC. They are Phil Wade, KA4JPM, President; Jim Walters, KB4FF, Vice-President; Al Link K4ICL, Trustee; Stoney Truett, KA4KGB, Secretary, and Chat Burriss, WB4REC, Treasurer.

Bob Burks, KC4LB and Al Harney, WB4URY were elected to two year director's terms.

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2) Interference such as you describe is not caused by HAM operations as HAM stations cannot and do not cause TV interferences. Nor is this interference the result of any malfunction of my equipment or poor operating habits, for my station is NOT a HAM station.

3) Be advised that your government is placing a $500 per year tax on all TV receivers. Because it is difficult at this late date to obtain a listing of TV set owners for taxation purposes, our government has established a vast network of jamming installations with the goal that TV set owners will make themselves known to these jamming stations so that their names can be added to the tax rolls. This station is just such an installation. (Tnx to "ERARC CURRENT" — East River ARC, W. Va.)

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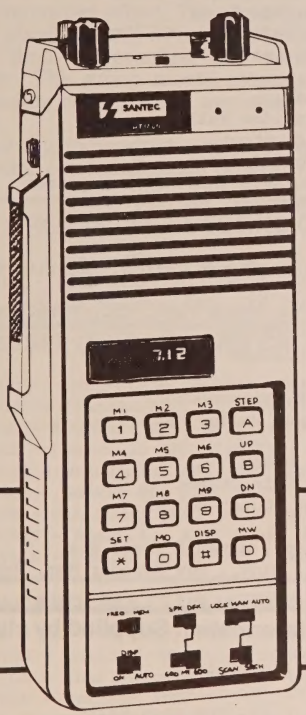

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NORTH CAROLINA CLUB MEETING CALENDAR

Information Supplied by Clubs

ASHEVILLE - W. Caro. ARS. Bus. 1st Thur., 1930; 2nd Mon. 1930, Various Locations
BENSON - Johnson ARS. 3rd Thur., 1930 at 50-210 Fire Station
BURLINGTON - Alamance ARC. 2nd & 4th Monday 1930, at 230 E. Summit Ave.
BURLINGTON - Alamance Repeater Assoc. Inc. Last Sat. 1900 at B&J Cafeteria
CARY - Cary ARC. 4th Thur. 1930 at White Plains Methodist Church, Activity Bldg.
CHARLOTTE - Mechlenburg ARS. Last Tue. 1930 at Red Cross Bldg. on Park Rd.
CHARLOTTE - Charlotte ARC. 4th Thur. 1900 - Club Building - WSOC-TV Tryon Street
CHARLOTTE - Friday Lunch Group. Fri. 1200 at Mediterranean Rest. on Independence Blvd.
CONCORD - Cabarrus ARS. 3rd Mon. 1930 at Kimball Lutheran Church, Aux. Bldg., Kannapolis
DURHAM - Durham FM Assoc. 2nd Tue. 1800 at Picadilly Cafeteria, So. Sq. S. S.
DURHAM - Triangle Radio Alert Network. 3rd Thur. 1800 at Picadilly Cafeteria, So. Sq. S. S.
REIDSVILLE - Rockingham City ARC. 1st Mon. & 3rd Thur. 1900 at Municipal Bldg.
FAYETTEVILLE - Cape Fear ARS. 3rd Mon. 1900 at Methodist College
FRANKLIN - Franklin ARC. 2nd Thur. 1900 at Macon Savings & Loan Assn.
GASTONIA - Gaston City ARS. 1st Mon. 1900 at Community Room at Eastridge Mall
GREENVILLE - Brightleaf ARC. 2nd Tue. 2000 at Planters Nat. Bank, downtown.
GREENSBORO - Greensboro ARA. 4th Mon. 1830 at Founders Hall, Guilford College
GREENSBORO - Guilford Am. Soc. (GAS). 2nd Mon. 1830 at diff. restaurants announ. on Repeater
HIGH POINT - High Point ARC. --2nd Tue. 1930 at Student Center, High Point College
HIGH POINT - High Point ARC. Tue. 1930 - Old Mill Rd.
JACKSONVILLE - Onslow ARC. 2nd Tue. 1915 at Carolina Barbecue.
KANNAPOLIS - Cabarrus County ARS. 3rd Mon. 1930 at Kimball Memorial Lutheran Church, Activity Bldg.
LAURINBURG - Scotland County ARS. 1st Wed. at Cablevision Office
LEXINGTON - Healing Springs Mt. VHF Soc. Last Mon. 1930 at Burlington House Furn. Co., Pers. Off.
LUMBERTON - Lumberton ARC. 3rd Thur. 1930 at Robeson County Public Library
MORGANTON - Morganton ARC. 1st Mon. 1930 at W. Piedmont Community College
NEW BERN - New Bern ARC. 3rd Thur. 1930 at Country Kitchen
N. WILKESBORO - Foothills ARC. 1st Tue. 1930 at Fairplains School N. Wilkesboro
RALEIGH - Raleigh ARS. 1st Wed. 1930 at West Community Room, Crabtree Valley Mall
ROCKINGHAM - Rockingham ARC. 1st Thur. at East Rock Fire Dept.
ROCKY MOUNT - Rocky Mount ARS. 3rd Thur. at Golden Corral in Rocky Mount
SALISBURY - Rowan ARS. 2nd & 4th Mon. 2000 at Salisbury City Hall, Main Street
SHELBY - Shelby Radio Club. 2nd Mon. 1830 at Hungry Bull Restaurant, Dutch Supper
SILVA - Smokey Mt. ARC. 2nd Tue. 1900 at Southwest Tech. Institute
STATESVILLE - Iredell County ARS. 2nd Thur. 1900 at Agriculture Bldg., Water & Tradd Sts.
WILMINGTON - VHF Society. 2nd Tue., Odd Months, 1930 at Cameron Ed. Bldg., New Hanover Mem. Hosp.
WINSTON SALEM - Forsyth ARC. 2nd Mon. 1930 at Red Cross Building

VIRGINIA CLUB MEETING CALENDAR

Information Supplied by clubs

BLUEFIELD - East River RC. 1st & 3rd Mon. 2030 at Commercial Bank, Bluefield
CHARLOTTESVILLE - Albemarle ARC. 2nd Wed. 1930 at City Courthouse on 4th Street, NE
CHARLOTTESVILLE - University of Virginia ARC. every other Mon. Rm. C119, Thornton Hall
COVINGTON - VHF Communications Assn. 2nd Wed. 1930 at different Members homes
DANVILLE - Danville ARS. 1st & 3rd Fri. 1930 at American Red Cross Bldg., Main St.
FARMVILLE - Southwide ARS. 1st Thur. 1930 at Hampton-Sydney College, Farmville
GALAX - Briarpatch ARC. 1900 at Galax Recreation Center
HAMPTON - Southern Peninsula AR Klub (SPARK). 1st & 3rd Wed. 1930 at VEPCO Building
LYNCHBURG - ARC. 2nd Fri. 2000 at Virginia Baptist Hospital Auditorium
MARTINSVILLE - Patrick Henry ARA. 3rd Tue. 1930 at Henry Cty. Admin. Bldg.
NEWPORT NEWS - SPARK. 1st & 3rd Wed. 1930 at VEPCO Building in Hampton
NORFOLK - Hampton Roads Radio Assn. 1st Wed. 1930 at Red Cross Headquarters, Norfolk
NORFOLK - Tidewater ARC. 2nd & 4th Sat. 1000 at Fort Norfolk, Hampton Blvd.
PORTSMOUTH - Portsmouth ARC. 2nd & 4th Thur. 432 Broad Street, Portsmouth
RAPPAHANOCK - ARA. 2nd Tue. Meeting places will be announced monthly.
RICHMOND - Virginia ARA. Last Fri. 2000 at Hermitage Auditorium, Westwood & Hermitage
RICHMOND -(RATS) 1st & 3rd Fri. 1930 at the Stone House in Forest Hill Park
RICHMOND - ARC. 2nd Fri. 2000 at the Stone House in Forest Hill Park
ROANOKE - Roanoke Valley ARC. 2nd & 4th Fri. 2000 at Colonial Ave., Presbyterian Church
VIRGINIA BEACH - ARC. 1st Thur. 1900 at Virginia Beach Recreation Center
WINCHESTER - Shenandoah Valley ARC. 1st & 3rd Fri. 2000 at Club Building on Grace St.

CVRA JOURNAL SALUTES T-MARC

To the north of Southeastern Repeater Association territory, a similar organizations exists, T-MARC, The Middle Atlantic FM and Repeater Council. T-MARC like CVRA-SERA was organized in the early 70's. In the beginning, Garry Hendrickson, W3DTN was designated Frequency Coordinator. In the mid 70's, as repeater activity continued to grow at a rapid rate, and coordination load increased, the coordination program was changed into a committee effort. The committee today consists of about 8 area FM'ers, all serving "at large" rather than representing any specific club or repeater. The group meets monthly to consider coordination requests and any other items on the agenda.

According to Hendrickson, "with only a very few exceptions, our coordination program has met with excellent success, a tribute to the repeater operators in our area." "These Amateurs all recognize the benefits they derive by participating in our program."

T-MARC has a very close working relationship with the frequency coordiators in all adjacent areas, including CVRA-SERA. They have an agreement with CVRA whereby they provide coordination services for the norther 1/3 of Virginia. The group also coordinates frequencies for Deleware, Maryland and Washington, D.C. They are also involved with working closely with CVRA in cordination in the Eastern panhandle of West Virginia.

Hendrickson said the organization does not have a member from Northern Virginia serving on the Coordinating Committee. He said they are looking for an active and knowledgeable Northern Virginia FM'er who would like to participate in T-MARC committee activity.

WEST VIRGINIA CLUB MEETING CALENDAR

Information Supplied by Clubs

OAK HILL - Plateau ARA. 1st Tue. Bd. of Education, Fayetteville, W. Va.
BLUEFIELD - East River RC. 1st & 3rd Mon. 2030 at Commercial Bank, Bluefield
BECKLEY - Black Diamond ARC. 3rd Thur. in Beckley

TENNESSEE CLUB MEETING CALENDAR

Information Supplied by clubs

CHATTANOOGA - Tri-State FM Assn. 1st Fri. 1930 at American Red Cross Bldg.
CROSSVILLE - Plateau ARC. 2nd Sat. 1900 (CST) Announced place on 93-33 Rpt.
KNOXVILLE - Fountain City ARC. 1st Mon. 1800 at Chubbies Restaurant, Broadway Shop. Cen.
KNOXVILLE - Knoxville ARC. 3rd Fri. 1930 at Knoxville Fire Dept. Training Center
LAFOLLETTE - Walnut Mt. ARC. 3rd Mon. 1900 at Lafollette Recreation Center
MARRYVILLE - Smokey Mt. ARC. 4th Mon. 1930 - Hall Road
OAK RIDGE - Oak Ridge ARC. 2nd & 4th Mon. 1930 at Oak Ridge Civic Center
ROAN COUNTY - Roan Cty. ARES Club. 2nd Tue. 1930 at Old Pond Grade School, Rockwood
SEVIERVILLE - Sevier County ARC. 3rd Thur. 1930 at Presbyterian Church

SOUTH CAROLINA CLUB MEETING CALENDAR

Information Supplied by clubs

ANDERSON - RC. 4TH Thur. 1930 Andsn. Cty. Arts Bldg. - Lunch Brk Fri. Noon, Quency's Steak House
CHARLESTON - Holiday VHF Soc. 2nd Wed. 2030 at Pinehaven Shopping Center Meeting Room
CHARLESTON - Charleston ARS, Inc. at Home Federal Meeting Room, Ashley Plaza S. S.
CHARLESTON - Trident ARC. 3rd Wed. 1930 at Park Cir. Presby. Church
CHERAW - Chesterfield Cty. ARS. 3rd Tue. 1900 at Chesterfield Technical Inst.
CLEMSON - Clemson Univ. ARC. - (During School Year - Posted prior to meeting)
COLUMBIA - Columbia ARC. 1st Mon. 1930 at S. C. Electric and Gas Building
DILLON - Dillon Cty. ARC. Each Mon. Informal, 2nd Mon. Formal 1900 at Lion's Club Bldg., Wash. St.
EASLEY - Altamont ARC. 4th Tue. 1930 at First Federal Bank Building
FLORENCE - Florence ARC. 1st Tue. 1930 at Shoney's
FLORENCE - Florence FM Repeater Assn. 3rd Mon. 1930 at Florence Darlington Technical Center
GREER - Greer ARC. 1st Mon. 1930. Meeting location announced monthly.
GREENVILLE - Blue Ridge ARS. 1st Tue. 1930 at Red Cross Building, 3rd Tue., Dinner.
GREENVILLE - The Dutch Lunch Club. Mon. 1245 at S&S Cafeteria
GREENWOOD - Piedmont Tech. ARC. 1st Mon. 1930 at Piedmont Tech.
KEEOWEE - Keeowee, Toxaway ARC. 3rd Tue. at Keeowee, Toxaway Visitors Center
LANCASTER - Lancaster Cty. ARC. 3rd Thur. 1930 at USC, Lancaster Campus
LAURENS - Caro. Computer and ARA. 2nd Fri. Gen. Mtg.; 4th Fri. Digital workshop
ORANGEBURG - Orangeburg ARC. 3rd Thur. 1930 at Elks Club, Hwy 301 N & 601 N
ROCK HILL - York Cty. ARS. 2nd & 4th Thur. 1930 at Club Room, Beaty Mall, Rock Hill
SUMTER - Sumter Repeater Assn. 3rd Mon. 2000 at County Office Building Conference Room
WALTERBORO - Coastal ARA. 2nd Sat. 1900. Meeting announced on 31/91 net.

Saturday, May 30th

COLUMBIA HAMFEST 81

NEW GEAR,
USED GEAR,
OLD FRIENDS,
NEW FRIENDS...

At 9AM, Sat. May 30, the Columbia Amateur Radio Club will kick off its 4th annual hamfest. Like last year, the location is the Beltline Blvd. campus of Midlands Technical College, Columbia, South Carolina.

The outdoor flea market promises to be a real attraction this year, with plenty of newly paved display area for "tailgating".

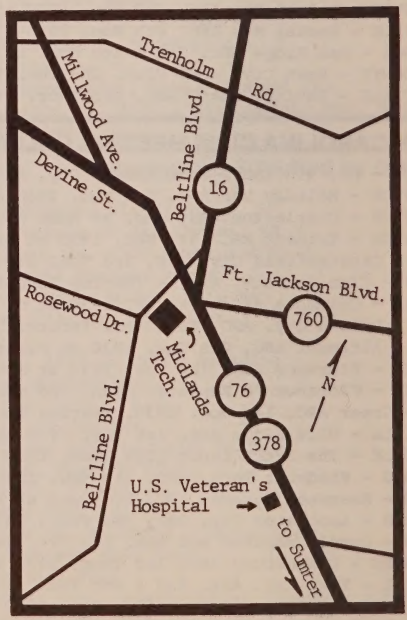
A new Yaesu FT-207R synthesized HT will be given away to some lucky person, and the dealers' display will feature the hottest new items.

And don't forget AA4V's captivating A/V presentation of the 1979 VP2KC St.Kitts World Record DX contest!

Roomy parking, food/drink concessions & a 34/94 talk-in will help round out a fun day.

Admission is $3 ea. at the gate. This includes 1 chance at the drawing & 1 flea market space. (Additional drawing chances are $2 ea. & flea market spaces $3 ea.)

Come & visit with us. See your old friends and make some new ones!



COLUMBIA AMATEUR RADIO CLUB
P.O. Box 5802.
Columbia, SC 29250

BUILDING SOUP CAN ANTENNA

Continued From Page 23

CONSTRUCTION

Both ends are cut out of 3 of the Campbell Soup cans. These will be used in the middle of the coaxial matching section. For the "top" can of the coaxial matching section, one end is completely removed and the other end is cut out except for a ¼-inch wide lip. Later this lip will be the support for the plastic spray can top. For the "bottom" can, one end is completely removed and the other end has a hole cut in it to just pass the 5/16-inch threaded rod.

The wooden block should have a hold bored through it that is just big enough to pass the 5/16-inch threaded rod. The bottom of the block should have a larger hole countersunk in it to hold a nut and washer.

The "bottom" soup can is mounted on the wooden block using the threaded rod. The soup can is turned so that the end with the small hole is next to the wooden block. A nut and washer in the soup can and another nut and washer in the countersunk hole of the block will hold the items together. The rod should not extend below the block so that the block can sit on a surface and not scratch it.

A coax chassis connector is mounted on the side of the "bottom" soup can about 3-½-inches from the bottom. The center conductor of the coax connector is attached to the threaded rod 3½ inches from the bottom of the soup can. It can be soldered but a convenient method is to wrap a wire around the rod and hold it in place between two nuts and washers.

The remaining 4 soup cans are soldered together with the "top" soup can on one end with the lip away from the other cans. Next the 4 soup cans are soldered to the "bottom" soup can so that the lip of the "top" soup can is on top.

The top of the soup cans and the top of the threaded rod must be held rigid yet be insulated from each other. The plastic spray can top is used for this. A hole is cut in the spray can top so it will just slide over the threaded rod and then rest on the lip of the "top" soup can. The plastic spray can top can be held in place between two nuts and washers or better yet by one nut and washer screwed down tight. A piece of sheet plastic or thin wood will also work as an insulator and support.

Finally, the replacement automobile antenna is mounted on top of the threaded rod. Most replacement auto antennas designed for stud mounting have a set screw that will hold it in place.

ADJUSTMENTS

The only adjustment is to adjust the length of the auto antenna. A length of 39 inches is need as measured from the top of the "top" soup can to the top of the auto antenna.

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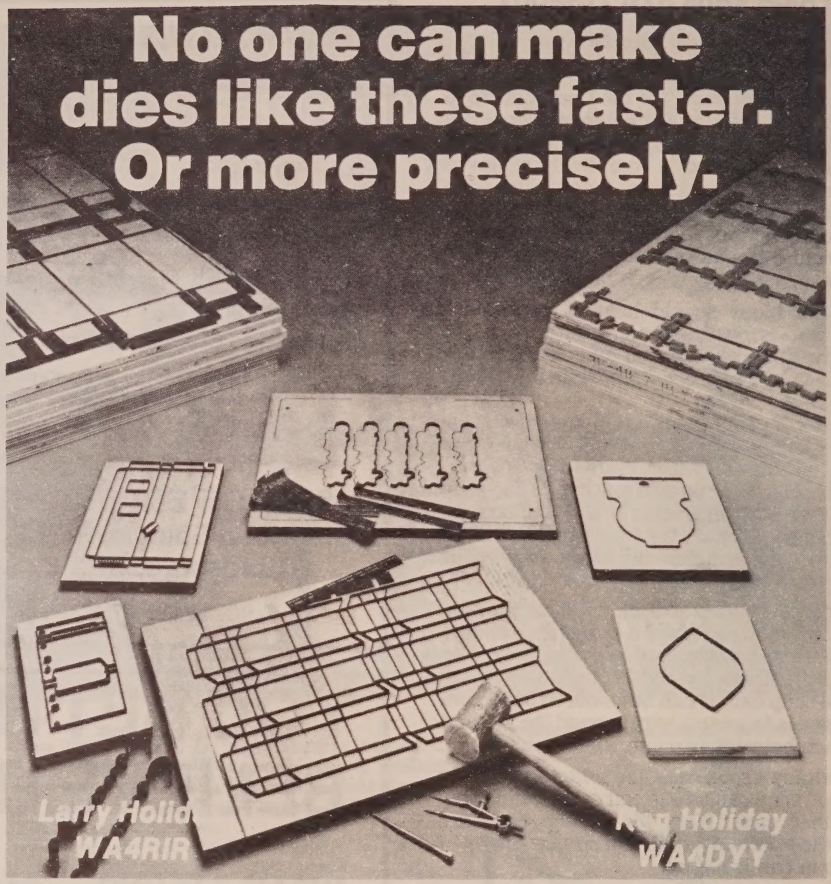

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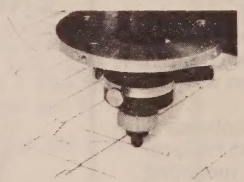

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ATV THRIVING IN KNOXVILLE

One exciting area of Amateur Radio is ATV. The East Knoxville Radio Club has several members with working ATV stations.

The group is going to refurbish some old repeater equipment and has coordinated 144.61-145.21 for the local Knoxville machine. This machine will be a gathering place for club members and may have an ATV net for those who are interested.

ATV hams in Knoxville have a difficult time on simplex because of the many ridges and mountains, and are looking for some person or group that would cooperate with their club in putting on an ATV repeater in the area. Anyone interested in getting on ATV or working with this club on an ATV repeater, contact Joe Anderson, K4KFD, 4124 Shangri La Drive, Knoxville, Tn. 37914.

MARYLAND HAMFEST JULY 26

The Baltimore Radio Amateur TV Society will sponsor the Maryland Hamfest at the Howard County Fairgrounds, 15 miles West of Baltimore, Maryland, just off I-70 at Rt. 32 on Rt. 144. Many prizes, giant flea market, indoor and outdoor exhibit areas and contests are featured. Talkin on 16-76, 63-03 and 52 simplex. For info and reservations write: BRATS, P.O. Box 5915, Baltimore, Md. 21208.

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T-MARC REPEATER INDEXES SUPPLIED BY HENDRICKSON

There are dozens of dedicated Amateurs who always supply the CVRA JOURNAL editor with much news and information every issue. Our computer has updated listings for 10 different states of repeaters on all UHF/VHF bands. Aside from the 5 District states, we get information on the other States by persons outside our territory.

One such dedicated Amateur is Gary Hendrickson, W3DTN of Severn, Maryland. Gary has supplied the editor of the Journal with updated repeater indexes every three months for Maryland, Deleware, Northern Virginia and Washington, D.C. This job he has done for years without asking for a thing in return, and generally not getting credit for his effort in the Journal.

Gary's amateur days began in 1955. He first got on VHF-FM in 1956 through a local radio club. In 1965 he helped Bruce Carpenter, W3YVV, build the first repeater on Maryland on 146.34-146.76 and was involved in a group that had a remote base on 52.525.

In the late 60's Gary became acquainted with frequency coordination from fellows in Pennsylvania, New Jersey and New York, and began maintaining a list of repeaters in his area as VHF-FM activity began to catch on.

As a result, Gary said, "I sort of grew into the position of being known as the area Frequency Coordinator." In 1972, he was appointed as the first 3rd call area member of ARRL's VHF Repeater Advisory Committee. (VRAC).

Today Gary still loves VHF-FM and actively participates in club activities, and represents T-MARC as Committee Secretary. He still sends the CVRA JOURNAL news and repeater listing up dates every quarter.

Thank you Gary! We salute you for being a very important part of the JOURNAL.

NEW REPEATERS IN QUIET ZONE MUST COORDINATE WITH NRA

—Special from HR Report

New repeaters near the National Radio Astronomy Observatory and Naval Research Laboratory in the so called "Quiet Zone" must coordinate with the observatory and lab authorities, the FCC has concluded.

The action, which extends existing sanctions to Amateur repeaters in the quiet zone straddling the Virginia/West Virginia border and surrounding Green Bank and Sugar Grove, Virginia applies only to new repeaters or modifications of existing machines. No already operating repeater, individual Amateur station or mobile passing through the area is affected.

Ringo Ranger II: We've made the best better.

The new Cushcraft Ringo Ranger II incorporates Cushcraft's latest design features for increased performance and greater operating pleasure. Ringo Ranger II is the most recent design from Cushcraft's engineering team. The wisdom of Cushcraft's founder Les Cushman, W1BX (50 years of licensed ham radio and antenna designing) plus the effort of Dave Olean, K1WHS, world renowned active VHF/UHF enthusiast (first 2 meter EME WAC) and creator of many recent Cushcraft antennas have led to this superior design.

The new Cushcraft Ringo Ranger II is the longest lasting best performing 2 meter FM base station antenna. Check these features.

Ringo Ranger II incorporates proven features with new insulating materials and 5/8 wavelength decoupling section for increased gain and feedline isolation.

Covers entire band yet can be optimized for your location and favorite operating frequency.

Made from 6063-T832 corrosion resistant seamless aluminum tubing. Does not have noise producing "stovepipe" seams. Longer life because insulators are not degraded by short exposures to sunlight. Clean profile for best appearance and least wind loading.

Strong enough to endure wind and ice storms. Built-in lightning arrester to reduce static noise and lightning hazzard. Conveniently mounted and it fits nicely on towers with other antennas.

ANTENNAS	ARX-2B	144-174 MHz
	ARX-220B	220-225 MHz
	ARX-450B	435-470 MHz

Ringo Ranger II Conversion kit includes decoupling section with mounting ring, hardware, RG-8/U cable, vinyl connector boots, plus a built-in lightning arrester. An easy upgrade for your Ringo Ranger.

CONVERSION KITS	ARB-2K
	ARB-220K
	ARB-450K

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CUSHCRAFT ANTENNAS

A3	New 3-Element Tribander	$169
A4	New 4-Element Tribander	$219
ATV5	80-10 mtr Vertical	$ 90
20-3CD	3-Element 20 mtr "Skywalker"	$165
20-4CD	4-Element 20 mtr "Skywalker"	$239
15-3CD	3-Element 15 mtr "Skywalker"	$ 82
15-4CD	4-Element 15 mtr "Skywalker"	$ 98
10-3CD	3-Element 10 mtr "Skywalker"	$ 59
10-4CD	4-Element 10 mtr "Skywalker"	$ 75
32-19	19-El. 2-mtr. "Boomer"	$ 75
214B	14-El. 2-mtr. "Boomer"	$ 59
214FB	14-El. 2-mtr. FM "Boomer"	$ 59
228FB	28-El. 2-mtr. FM "Power Pack"	$188
220B	220 MHz Boomer	$ 69
ARX2-B	2-mtr. "Ringo Ranger" II	$ 38

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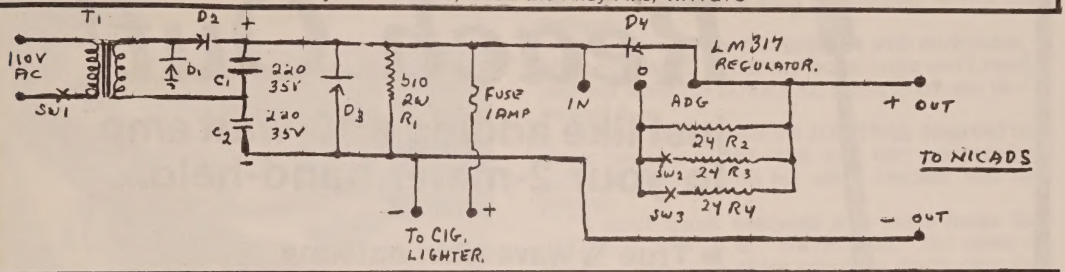
HOW TO BUILD A CONSTANT CURRENT NICAD CHARGER

—by W.O. Conrad, K4BE and Andy Pitts, WA4GTC



Along with many of the new synthesized handhelds on the market today there is a need for a "quick charge" method of charging the 9.6 volt nicad batteries. One of the main problems is to have a system with current limiting devices, yet capable of supplying enough current to correctly the charge the batteries.

We have designed this little Nicad Constant Current Charger for use with nicad batteries. When using AC supply batteries up to 15 volts can be charged. When used in the car on the cigarette lighter, batteries up to about 11.5 volts can be charged.

CAUTION: With both SW-2 and SW-3 open, charging rate is 50 ma. With SW-2 closed, charging rate will be 100 ma and with both SW-2 and SW-3 closed, the charging rate will be 150 ma.

When using the 100 and 150 ma rate, be sure to observe the charging time limitations listed in your handheld operating manual.

The 50 ma rate can be used continuously. If using the unit with a handheld, you may receive and transmit when charging at any rate selected with no hum.

After you have wired the unit it may be tested by placing a milliameter across the output. With SW-2 and SW-3 open, the meter should read 50 ma. With one switch closed, the meter should read 100 ma., and with both switches closed, the meter should read 150 ma.

Adequate protection is built into the unit so when plugging into the cigarette lighter of your car and you goof accidentally, the fuse will blow.

This unit can be used with any voltage NICAD up to the limits listed above in the description.

PARTS LIST (Radio Shack Numbers)

T-1 — 12v, 300 ma (273-1385)
D-1,2,3,4 — 1A 200v (276 1102)
C-1,2 — 220mfd 35V (272 1029)
Regulator LM 317 (276 1777)
SW-1,2,3 SPST (Many diff. available)
R-1 — 510 ohm 2 watt
R-2,3,4 all 24 ohm ½-watt
(Radio Shack might not carry all values of resistors needed, and another source might be necessary to obtain them)
Cigarette Lighter Adapter
Mounting box, FUSE 1 amp and mounting block.

We have built several of these neat little units in the Winston-Salem (N.C.) area and they work fine. Again we remind you to watch your charging time when using the 100 ma or 150 ma charging rate.

TILLOTSON RESIGNS AS S.C. DIRECTOR — BUSINESS REASONS

Rich Tillotson, WA4SSJ in a letter dated March 28 tendered his resignation as South Carolina Director for the CVRA-Southeastern Repeater Association.

In his letter, Rich indicated, "I have been on the road or in the air all but two and a half weeks since the 9th of February." With that kind of schedule and a promise of much more to come by his employer, Rich felt he could not exercise his duties to the organization in a way he should under this kind of schedule.

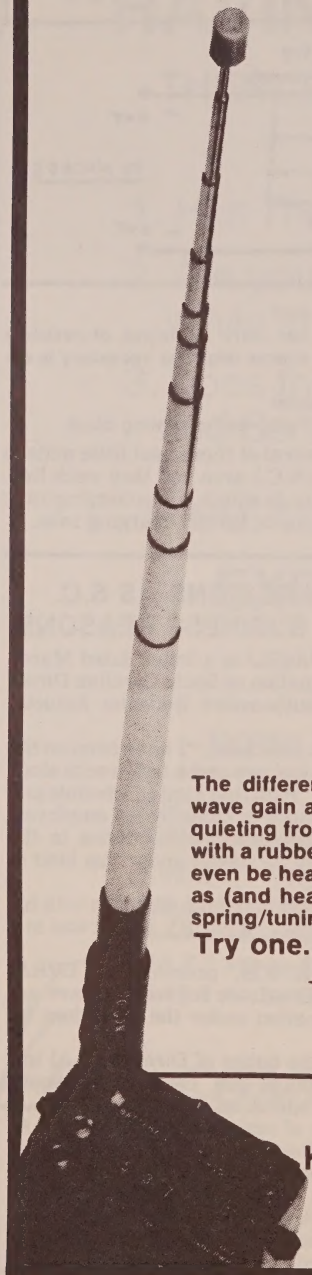
Rich said he had discussed the situation with his vice-Director, Al Harney, WB4URY and Al was in a position to take over.

Lane Tarleton, KC4CD, president of CVRA-SERA told the JOURNAL we regretfully have accepted Rich's resignation under the conditions he explained.

"We will assign the duties of Director to Al immediately so continuity can continue in South Carolina," Tarleton added.

Rich in his letter of resignation said he and Al shared the same philosophy and the same dedication for our organization.

"I want to thank you for the confidence South Carolina Amateurs have displayed since my taking over as Director. This made the letter very difficult to write", Rich closed.



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REPEATER JOURNAL RATED "OUTSTANDING" — 3rd YEAR

EDITOR, Wayne Williams at his JOURNAL News Desk

The REPEATER JOURNAL editor, Wayne C. Williams, K4MOB was notified in mid April that the magazine won an "Outstanding" rating again in 1980. The rating is the top honor given to publications entered in the Amateur Radio News Service Publications Contest.

This latest award for the JOURNAL follows "Outstanding" ratings for the years of 1978 and 1979. Williams received a handsome Certificate of Merit from ARNS as well as a critique as to overall judging of the magazine.

The judging of the JOURNAL was among entrants from all over the United States, Canada and England.

Editor and Publisher Williams said, "I am quite honored that ARNS saw fit to give this very nice award to our magazine for the third year in a row."

He said that much of the credit should be given to dozens of faithful Amateurs across CVRA-SERA territory who send in such outstanding stories and features.

"We try very hard to improve with each issue," Williams added, "I am my worst critic and I really feel bad when the JOURNAL doesn't turn out like I wanted it to."

Williams said he felt the JOURNAL deserved the honor because of the tight and very cooperative spirit he shares with his staff, readers and the printer.

"I can't thank everyone who helps make the JOURNAL what it is," Wayne said, "But some of the ones who have given countless hours over the past years in helping make a good journal include: Lindsay Cleveland with the Computer, taking care of our 10 states of updated repeater indexes, and the massive membership lists; Our out-of-territory "index-keepers", Gary Hendricksen, TMARC; Al Friend, Florida; Dave Nulty, Alabama and Georgia; David Wolfe, Western Tennessee; and our Directors who keep our territory indexes straight."

Another friend, Herb Lacy and his computerized Club Calendar is a newcomer and helper. Our printer, Golden Triangle of Greensboro, N.C. works with us and goes out of their way to assist in every way possible.

Also thanks to Jim Bartlett and his wife for getting the Journal labeled and mailed; Ken Holiday and his wife for getting our advertising in on time, and doing the billing; Larry McLaurin and his helpers for keeping us up-to-date in membership counts; and Wayne's wife, Gerry who is his chief proofreader and staunchist critic.

"Without all these people, we wouldn't have a JOURNAL," Wayne said, "I am honored and quite lucky to work with such a dedicated bunch."

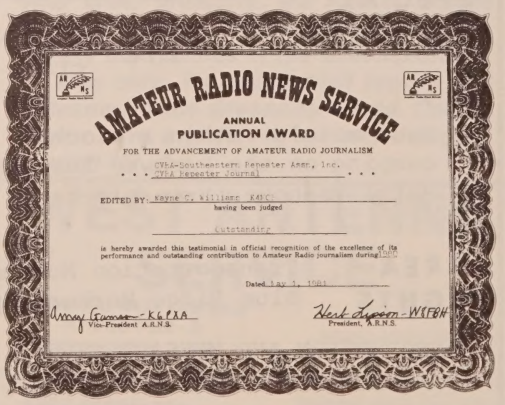
DON'T FORGET SASE

If you expect to be receiving cards via the QSL bureau, don't forget to send a supply of SASE envelopes, with perhaps a couple of extra stamps attached. If you do not have SASE envelopes on file at your respective QSL bureau, you may never see some of those good DX QSLs come back.

The W4/K4/N4 bureau address is: QSL BUREAU, P.O. BOX DX, CHARLOTTE, N.C. 28220.

TECHNICAL TIP

If your radio room as progressed to the point of having numerous antenna feedlines and interconnecting cables, get some small cardboard tags with string ties and label everything. Makes it much easier to find your way around in your own shack.


AMATEUR RADIO NEWS SERVICE
ANNUAL
PUBLICATION AWARD
FOR THE ADVANCEMENT OF AMATEUR RADIO JOURNALISM
CVRA-Southeastern Repeater Assn, Inc.
CVRA Repeater Journal
EDITED BY: Wayne C. Williams K4MOB
having been judged
Outstanding
is hereby awarded this testimonial in official recognition of the excellence of its performance and outstanding contribution to Amateur Radio journalism during 1980
Dated: May 1, 1981
Vice-President A.R.N.S.
President, A.R.N.S.

REPEATER JOURNALS "Outstanding" ARNS Award

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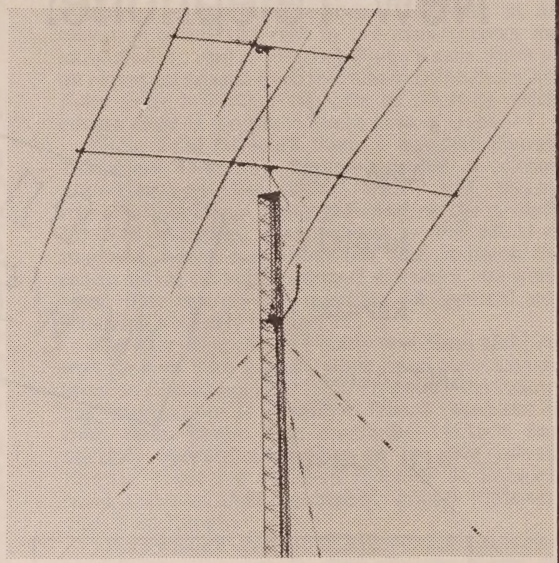

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SOME HAWAII NOTES

—By Ted Wolfe, WD4KHL

Special to the Journal

Cabin Creek, WV — I returned to West Virginia in early February after a three month contract job in Hawaii and thought other hams might be interested in some of the observations made during my stay in Honolulu. And that's what this is — just observations and impressions.

First off, I was disappointed in one respect with two meters. I'm used to very busy repeaters and in Hawaii there didn't seem to be that much activity compared to the Mainland. As for rigs, I gathered most hams there carry a handie-talkie. That is usually sufficient to hit most of the repeaters since Oahu is not really that big of an island. Hawaii hams seem to be early risers. Often I left my rig on all night at my hotel and I was almost always awakened by activity between 5:00 and 6:00 a.m.

Because of the pecularities of Hawaiian land ownership and the environmental movement, the skyline and the heights of the Koolau range are not marred by towers or antennas. As a result there is no single amateur repeater that covers the whole of Oahu. I was told there is a MARS repeater that covers the whole of Oahu. I was told there is a MARS repeater at the 4,000 foot level on Mt. Kaala in the Wainae Range to the west on a Military Reservation that gives MARS operators nearly complete coverage.

Honolulu hams use the 146.19-79 machine up 2,000 feet on Manukapu, near Barber's Point; the 146.37-97 machine on the top floor of the Municipal Building, and the Diamond Head machine on 146.28-88.

The Municipal Building machine is linked with the 147.93-33 machine on the Island of Kauai. It also has autopatch. The Diamond Head machine, 146.28-88 is linked with the 146.34-94 machine on Haleakala Mountain on Maui, and that in turn is linked to the 146.22-82 machine on Mauna Loa on the Big Island (Hawaii). That link set-up constitutes the state-wide system we hear about in Hawaii. The links are in the 450 Mhz range. The Municipal Building machine is owned by the city and is used in weather and other emergencies with hams manning the emergency communications center. That is indicative of the spirit of cooperation between government and amateur fraternity.

The Honolulu Amateur Radio Club is mostly social in nature. KH6JJP, George Clark, 1174 Lunaii St., Kailua, Oahu, Hawaii 93734, is president of EARC for 1981. EARC, the Emergency Amateur Radio Club, owns most of the linked repeaters and links, though not all. KH6CIZ, Robert J. Terry, 99-531 Kaholi Place, Aiea, Hawaii 96701, is an officer of EARC and can provide full details of their linked machines.

On the Windward side of Oahu there are machines on Waimanale Ridge, 146.04-64, at an elevation about 1300-feet in the area renown for hang-gliding; and at Peacock Flats/Kaena Point at an elevation around 2,000 feet above Dillingham Air Field there is another repeater on 146.16-76 which covers most of the North Shore area of Oahu.

While I did not work them, I was told Hawaii Telephone Company hams operated a closed repeater on 146.12-72; and that many radio/tv/technician types gathered on the private 147.66-06 machine. Also private is the 146.13-73 machine, which has autopatch, and is home for many native Hawaiian hams. I worked it one week when they opened the machine for general use following a weekly net session.

The only other island I got to was Maui and that was for less than 2-hours while on a news assignment on Christmas Eve, 1980. Therefore the following information on Neighbor Island repeaters is from Oahu hams. Two machines—146.16-76 and 146.28-88 operate near Hilo on the Big Island, Hawaii. There's a 146.16-76 repeater at Kahalui, Maui, and a 146.25-85 machine at Jackass Flats serving West Kauai.

There was an interesting experiment conducted on Sunday, January 11, 1981, by the EARC in cooperation with the Northern Virginia Repeater Association. The latter operates several repeaters in the Washington, DC—Northern Virginia area. They initiated an incoming call to the reverse autopatch on the Honolulu Municipal Building 146.37-97 repeater after that function had been enabled for the experiment. In effect, the linked repeaters of EARC were tied in for three hours with the linked repeaters of the Virginia group via long-distance telephone lines. It was interesting to work a mobile unit in the Washington suburbs by 2-meters through the Honolulu repeater. The tab for the line charges was picked up by the Virginia group which has a membership of about 750 hams and which conducted similar experiments with other repeaters in the past. In Honolulu be sure to contact KH6HAB, "Chief" Lee Ellis, a retired Navy man, or one of the Hickam Air Force Base enlisted mens' clubs, for an invitation to attend. Lee offered me a ride two Sundays while I was there. I understand you have to be accompanied by someone with a base pass to get in, but that's not difficult to arrange.

Mahalo and Aloha.

TECHNICAL TIPS

If your radio room as progressed to the point of having numerous antenna feedlines and interconnecting cables, get some small cardboard tags with string ties and label everything. Makes it much easier to find your way around in your own shack.

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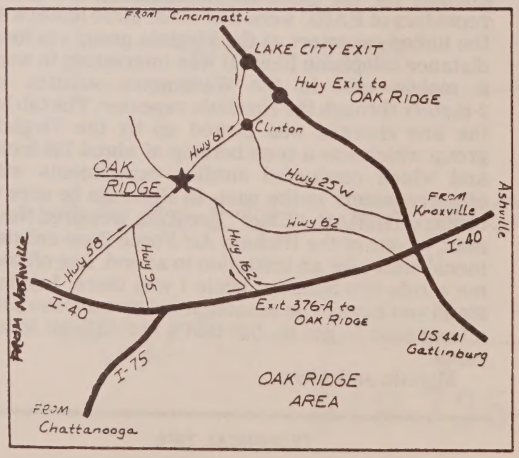

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CALENDAR

1981 HAMFEST CALENDAR

MAY

16-17 . . . . . DFMA Hamfest, DURHAM, N.C.
23 . . . . . Gaston Cty. Hamfest, GASTONIA, N.C.
23 . . . . Antique Wrlss Regional, WINSTON-SALEM, N.C.
23-24 . . . . . RACK Hamfest, KNOXVILLE, TN.
24 . . . . . Roa. Val. ARC Hamfest, ROANOKE, VA.
30 . . . . . Hamfest 81, COLUMBIA, S.C.
31 . . . . . Hamfest, HUMBOLT, TN.

JUNE

7 . . . . . Tri-State ARA, HUNTINGTON, W.VA.
7 . . . . . Ole Va. Hams 7th, MANASSA, VA.
20-21 . . . . . Atlanta HamFestival, ATLANTA, GA.
27-28 . . . . . Greater GBO Hamfest, GREENSBORO, N.C.

JULY

4-5 . . . . . W.Va. State Radio, JACKSON'S MILL, W.VA.
18 . . . . . Mid-Summer Fest CARY, N.C.
18-19 . . . . . Hamfest, CHARLESTON, S.C.
26* . . . . . Hamfest, NASHVILLE, TN.
26 . . . . . BRATS Hamfest, BALTIMORE, MD.

AUGUST

2 . . . . . SVARC Hamfest (Winchester), BERRYVILLE, VA.
9 . . . . . Jackson Cty ARC Hamfest, RIPLEY, W.VA.
23 . . . . . East River ARC Hamfest, BLUEFIELD, W.VA.
30* . . . . . Hamfest, MORGANTOWN, W.VA.

SEPTEMBER

5 . . . . . CVRA-SERA Annual Meet, SHELBY, N.C.
5-6 . . . . . 24th Annual Hamfest, SHELBY, N.C.
13* . . . . . Hamfest, CINCINNATI, OHIO
14 . . . . . Hamfest, GAITHESBURG, MD.
26-27 . . . . . Roa. Div. ARRL Conv., VIRGINIA BEACH, VA.

OCTOBER

4 . . . . . 30th Annual Hamfest, ROCK HILL, S.C.
4* . . . . . Hamfest, ROME, GA.
10 . . . . . W. Car. ARS Autumnfest, ASHEVILLE, N.C.
10-11 . . . . . Hamfest, MEMPHIS, TN.
24-25 . . . . . Hamfest, CHATTANOOGA, TN.

*Tentative only-Not confirmed by sponsoring club

AD AND NEWS DEADLINES

AUG. - OCT. ISSUE . . . . . JULY 1, 1981

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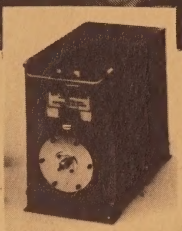
TECHNICAL TIP

It is a good idea to check the output voltage of your 12 - 13 vdc power supply you use in the house with your 2 meter tranceiver or other solid state rig of modern design. Many of these rigs have solid state transmit/receive switching that can switch itself to transmit mode if the supply voltage is low. Avoid the unnecessary embarrassment of being tracked down as a jammer because of this oversight.

The Maine Source RF

Meters

Elements



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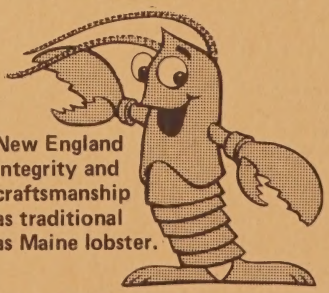

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